

Integrated Performance Assessment (IPA) Part One

Introduction

This comprehensive Integrated Performance Assessment (IPA) is designed to provide students an opportunity to demonstrate multidisciplinary content and language understandings and skills. A series of interrelated language-dependent tasks will elicit knowledge gained during this unit in the disciplines of literacy, social studies/culture, science and engineering. They will also invite reflection and critical thinking about the Juan Daniel narrative, the Salvadoran/Chinese/US cultures and student experiences with the model membrane design process.

The first of the interrelated IPA tasks will be one of two tasks that target the presentational mode. Presentational Task (Oral): Student groups will present their *improved* model membrane designs and report on what they did differently and learned during implementation of Step #5 of the engineering design process: *Improve*. While each student group presents, observing groups will collaborate to provide feedback to presenting groups. During this time, presenting students will individually complete MMIC 13-6/IPA 1-1: *Presentational (Oral) Scoring Rubric* on their own. This presentational task provides a chance for students to compare their Step #5 experiences and results and notice peer use of specific required language. The teacher will independently evaluate group presentations using MMIC 13-6/IPA 1-1: *Presentational (Oral) Scoring Rubric*.

As part of the IPA feedback loop, the teacher and students will review and debrief peer and teacher assessments and further refine content and language necessary to report on the model membrane design process.

Part One: Presentational Task (Oral)
(associated with EiE® Lesson 4)

Assessment Topic: How can we learn from our mistakes? Evaluating and presenting the improved model membrane designs.

DESIRED RESULTS (教学目标)

Academic Content Assessment Objectives: Students can...

Chinese Language Arts

- 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

Science and Engineering

- 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

- 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

Learning Strategies: Students can...

- Work cooperatively with each other
- Use background knowledge
- Make predictions
- Evaluate the effectiveness of methods
- Plan and organize
- Take notes

Chinese Language Objectives: Students can...

Functions and Forms

Content-obligatory (CO)

- 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

Content-compatible (CC)

- 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

Vocabulary

	Recognize (了解)	Produce (识记)
Content-obligatory	<p>Personal Characteristics 注意细节 attentive to detail, 一贯的 persistent, 好奇的 curious, 有想象力的 imaginative</p>	<p>Professional People 工程师 engineer, 生物工程师 bioengineer, 科学家 scientist</p> <p>Engineering Design Process 工程设计步骤 Engineering Design Process, 提问 ask, 思考 imagine, 设计 plan, 制作 create, 改进 improve, 步骤 step, 设计 to design, 模型 to model/modeling, 工程师 engineer, 实验 experiment, 科学家 scientist, 薄膜 membrane, 去解决实际问题 to solve real-world problems, 试一试新的想法 to try out new ideas, 运用想象力 to use imagination</p> <p>Measurement Words 液体量杯 measuring cup, 半个 one half, 四分之一 one fourth/quarter, 分数 fraction, 小数 decimal, 测量 to measure, 成功 success, 杯 cup, 毫升 milliliter, 体积 volume</p> <p>Materials-Related 容器 container, 盖子 lid, 铝箔纸 aluminum foil, 有一个孔的铝箔纸 aluminum foil with one hole, 有两个孔的铝箔纸 aluminum foil with two holes, 咖啡过滤纸 coffee filter, 纱布 cheesecloth, 毡布 felt, 海绵 sponge, 尼龙纱窗布 nylon screen, 材料 materials, 闪亮 shiny, 平滑 smooth, 厚 thick, 薄的 thin, 白色的/米色的 white/beige, 纸做的 made of paper, 有洞/有孔 has holes, 没有洞/没有孔 does not have holes, 有用/管用 works well, 没有用/不管用 does not work well, 组合 combination</p> <p>Action Words 改进 to improve, 记录 to record, 观察 to observe</p>

	Recognize (了解)	Produce (识记)
Content-compatible	<p>Assessment Words 测试 assessment, 反馈 feedback, 反馈圈 feedback loop, 综合的 integrated, 表现 performance, 理解的 interpretive, 表达的 presentational, 交流的 interpersonal, 同学评估 peer evaluation, 自我评估 self-assessment, 评分表 rubric, “准确地汇报” “accurately report”, “清楚地演示” “clearly present”, “正确地使用” “correctly use”, “连动词结构” “serial verb construction”, “修饰语” “modifying phrases”, 量词 classifiers, 复合句 compound sentence, 比较级 comparative expression, 视觉接触 eye contact, 评估 to evaluate, 标准 criterion, 质量 quality, 数量 quantity</p> <p>Assessment Activities 全班 whole class, 小组 small group, 伙伴 partner</p>	<p>Adjectives 厚 thick, 薄 thin, 孔 small hole, 大小适中 right-sized, 适合 suitable, 管用/不管用 useful/not useful</p> <p>Action Words 折 to bend, 剪 to cut, 穿(洞/孔) to pierce holes, 分层 to layer, 把它摺起来 to fold something, 滴 to drip, 负责 to be responsible for, 测试 to test, 描述 to describe</p> <p>Adverbs/Adverb Phrases 慢 slow, 中 medium, 快 fast, 全部 all, 部分 some, 没有 none, 太多 too much, 太少 too little, 正好 just right/exact amount, 最多 at most, 更 even more, 约 approximately</p> <p>Job Cards/Roles 中文督察员 Chinese Champion, 材料管理员 Magnificent Materials Manager, 记录员 Remarkable Recorder, 工作管理员 Terrific Taskmaster, 演示质检员 Polished Presenter</p>

Note: In the *Language-Function-Form-Vocabulary Connection* section you will find additional vocabulary that is directly supportive of the various language functions. The particular words and phrases you choose to target will depend on your students' proficiency levels. Because of this, we have not included all vocabulary here. At the end of this lesson, you will find a table that provides more detailed information about the lesson vocabulary identified above.

PREPARATION (教学准备)**Materials Needed for IPA 1**

- Interactive whiteboard pages for IPA 1
- Laminated “job” cards for groups
- Handouts:
 - a. Completed MMIC 13-1 (EiE® {4-8})
 - b. Clean copy of MMIC 13-1 (EiE® {4-8}), one per group
 - c. MMIC 13-3: *Group Feedback Form*, one per group
 - d. MMIC 13-4: *Numbers, Classifiers and Volume*, four per person
- MMIC IPA 1-TG: *Integrated Performance Assessment (IPA) Overview-Teacher Guide*
- MMIC 13-6/IPA 1-1: *Presentational (Oral) Scoring Rubric* (teacher evaluation)
- MMIC 13-6/IPA 1-1: *Presentational (Oral) Scoring Rubric* (student self-assessment)
- Students’ science journals
- Photos of groups’ first model membrane designs displayed on interactive whiteboard pages
- Improved model membrane design for each group

IPA Activities

Preview Phase—“Intro” activity

Students will review how much water needed to drip through their model membranes in the past 24 hours. In their groups, students will then observe their model membranes and measure how much water actually passed through. Groups will complete a handout evaluating their model membrane.

Time: 30-45 minutes

Presentational Task (Oral) Activity 1

1. In working groups from yesterday, pass out job cards. Jobs should rotate so that each student does something new today. In pairs within groups, students ask and answer the following questions (displayed on page 1 of MMIC IPA 1-IWB):

Chinese	English
昨天，我们组用了哪些材料来做我们的薄膜模型？	What materials did our group use for the model membrane yesterday?
昨天，我们组向薄膜模型里倒了多少水？ 答案：1/2 杯或者 118.3 毫升。	How much water did our group pour into the model membrane yesterday? Answer: 1/2 cup or 118.3 ml.
从昨天开始应该有多少水通过我们的薄膜模型？ 答案：一些，但是不超过 1/4 杯或者 59.1 毫升。	How much water needs to have dripped through the model membrane since yesterday? Answer: Some, but no more than 1/4 cup or 59.1 ml.
从昨天的演示中你能找出一些正确使用量词的例子吗？请说一说你的例子。 答案：一张铝箔纸。	What examples can you give of correct uses of classifiers from yesterday's presentations? Answer: 一张铝箔纸 (a piece of aluminum foil)

2. After pairs share answers within groups, invite **Chinese Champions** to share answers with the class.
3. Next, the groups will prepare to record results from the second improved model membrane design on handout MMIC 13-1 (EiE® {4-8}). Display page 2 of MMIC IPA 1-IWB, “小组活动之前”.
 - a. The **Magnificent Materials Manager** should pick up their groups' model membranes from the plastic bins.
 - b. The **Remarkable Recorder** should find the group's completed copy of MMIC 13-1 (EiE® {4-8}) from the *first* model membrane design, and

- c. the **Terrific Taskmaster** will pick up a clean copy of the same handout for the *second, improved* design.
4. Model an example on the page 3 of the interactive whiteboard, on a clean copy of MMIC 13-1 (EiE® {4-8}), write the number “2” in the box at the top of the sheet labeled “Design #”.
5. Ask groups to follow the example, and then to discuss and write answers to questions on the handout. Display page 4 of MMIC IPA 1-IWB, “小组活动进行中”. The **Magnificent Materials Manager** will measure the amount of water that passed through the membrane; the **Remarkable Recorder** will write the group’s answers to the questions; the **Terrific Taskmaster** will facilitate the discussion to be sure that everyone has a turn to share their ideas; the **Chinese Champion** will help with language needs and make sure that everyone stays in Chinese.
6. Circulate as students measure the volume of water in their cups to be sure that they are doing it accurately. There should be at least *some* water in the container, up to a maximum of $\frac{1}{4}$ cup (59.1 ml), in order to be considered successful.
7. When students are finished observing, measuring and recording, without changing their membrane design, display page 5 of MMIC IPA 1-IWB, “小组活动之后”. The **Magnificent Materials Manager** should put the materials away and all students should prepare for a wrap-up discussion. Handouts may be collected or the **Remarkable Recorders** may be entrusted to keep handouts/written results until the next activity.

Language Function-Form-Vocabulary Connections (Activity 1)		
CO IPA1.1.1	State quantities of materials using numbers and appropriate classifiers	
For example: 一张铝箔纸 (a piece of aluminum foil) 五张咖啡过滤纸 (five coffee filters) 三块纱布 (three pieces of cheesecloth) 两块海绵 (two sponges)		
Approaching	Attaining	Expanding
个 (gè) people and general object 家 (jiā) families and business establishments 件 (jiàn) clothing 棵 (kē) plants 只 (zhī) insects and animals 支 (zhī) rod-shaped objects, e.g., pencil, Chinese paint brush 把 (bǎ) small objects and objects with a handle, e.g., scissors, chair 本 (běn) journals, books and files	张 (zhāng) thin and flat objects, e.g., aluminum foil, coffee filter 块 (kuài) pieces of small things, e.g., felt, sponge 位 (wèi) persons of status, e.g., professor, engineer 碗 (wǎn) things that come in bowls mostly, e.g., noodles, rice, water 场 (chǎng) events and happenings such as episode, e.g., soccer game	滴 (dī) a drop/a drip used for liquid items 对 (duì) couple/pair: modifies anything that comes in pairs 架 (jià) planes and large vehicles and a few smaller electric objects such as radios
Form focus: Number + Classifier + Object (noun)		
Classifiers are used when counting objects (nouns). Almost all nouns have a corresponding classifier. When learning a noun it is always good to learn its classifier.		
Noticing and awareness spotlight		
1. The difference between 二 and 两		
二	两	
1) Counting: e.g., 一、二、三..... 2) Used in ordinal numbers: e.g., 第一 (first)、第二 (second)、第三 (third) 3) As last part of any higher number that ends in two: e.g., 十二 (12)、八十二 (82)	Used whenever a classifier is used to indicate “two of something”, see: Subj. + Verb + 两 + Classifier + Noun	

2. The difference between 只 and 支	
只 (zhī)	支 (zhī)
只 is used for insects and animals.	支 is used for rod-shaped objects.
These two classifiers are homophones. They have the same pronunciation but different uses and meanings.	

CO IPA 1.1.2	Use a locative phrase 在...里/在...中 to identify the topic		
Approaching	Attaining	Expanding	
在这里，我们用两张咖啡过滤纸和一块毡布。 In here, we use two coffee filters and one piece of felt here.	在我们的第一个薄膜模型的设计中，我们用了一块海绵、三张咖啡过滤纸，和一块毡布。 In our first model membrane design we used a sponge, three coffee filters, and one piece of felt.	在我们的经改进的薄膜模型的设计中，我们用了一块海绵、三张咖啡过滤纸，和一块毡布。 In our improved model membrane design we used a sponge, three coffee filters, and one piece of felt.	
Topic phrase (在 zài + adverb of location), subj pronoun + verb	Topic as noun phrase [在 zài + object phrase (possessive pronoun + noun phrase) + 中], subj. pronoun + verb	Topic as noun phrase [在 zài + object phrase (possessive pronoun + modified noun phrase) + 中], subj. pronoun + verb	
Form focus: Use of “在 zài ... 中” as topic phrase			
在 zài ... 中: describing time or location “in” or “inside of” <ul style="list-style-type: none"> 在这些薄膜模型设计中: In these model membrane designs 在足球场上: on the soccer field 			
Noticing and awareness spotlight: Providing detail with a modifying phrase			
To provide more detail within a locative phrase, we can add a modifying phrase, for example, “在 (zài) + modifying phrase + (的) + noun (+ locative particle).” There are a few different ways to construct a modifying phrase: <ol style="list-style-type: none"> Adj + 的: For example, 在我们的经改进的薄膜模型的设计中 (in our improved model membrane design) # Adj. + CL + noun + 的 + noun: For example, 在我们的第一个薄膜模型的设计中 (in our first model membrane design) 			

CO IPA 1.1.3	State exact amount of liquids using fractions/decimals with units of measurement
For example: 二分之一杯 (a half of a cup) 四分之三杯 (three quarters of a cup) 118.34 毫升 (118.34 milliliters)	
Form focus: Fractions/decimals	
Fractions begin with the denominator, followed by 分之 (parts of), and the numerator, e.g., # (denominator) + 分之 + # (numerator). When reporting decimals, the whole number before the period is expressed as a multi-digit number (e.g., 118.34; before the decimal point, 118 reads as 一百一十八 [one hundred and eighteen]), while the decimal is expressed as single digits (e.g., .34 reads as 点三四 [dot, three, four]).	
Noticing and awareness spotlight	
1. Units of measurement	
Units of measurement can function as nouns or classifiers. When units of measurement are nouns, no classifier is used. For example: Unit of measurement as noun: 118.34 毫升 (118.34 milliliters), 11.5 杯 (11.5 cups) Unit of measurement as classifier: 150 毫升水 (150 milliliters of water), 一杯水 (a cup of water) Other such units of measurement are 盎司 (ounce), 英尺 (foot), 英里 (mile), 磅 (pound), etc.	
2. 杯 (cup)	
杯 (cup) as physical object: use the classifier “个” (e.g., 一个杯子 [one cup]) 杯 (cup) as unit of measurement: do not use classifier (e.g., 11.5 杯 [11.5 cups]) 杯 (cup) as classifier: used as a classifier (e.g., 一杯水 [a cup of water])	

CO IPA 1.1.4	Describe attributes of something/someone using the existential verb 有 with a modifying noun phrase	
Approaching	Attaining	Expanding
水太多/太少/正好。 There is too much/too little/just right water. 我们有太多/太少/足够的水。 We have too much/too little/just right water.	(在)杯子里有太多/太少/足够/118.34 毫升的水。 There is too much/too little/just right/118.34 milliliters of water in the cup.	有太多/太少/足够/118.34 毫升的水通过了薄膜模型。 There is too much/too little/just right/118.34 milliliters of water that passed through the model membrane.

Subj. (noun) + [be verb is omitted] + adverb 太多/太少/正好 too much/too little/just right. Subject pronoun + verb 有...	Locative phrase + existential verb (有) + modifying noun phrase (adj. + 的 + noun)	Existential verb (有) + modifying noun phrase (adj. + 的 + noun) + Verb phrase
Focus on form		
1. Locative phrase + existential verb (有) + modifying noun phrase		
The locative phrase, identifying the place where something exists, begins the sentence. The locative phrase is followed by the existential verb (有 [have]) and a modifying noun phrase.		
2. Modifying noun phrase [adj. + 的] + Head noun		
Modifying phrases can be attributive adjectives followed by the particle 的, e.g., 光亮的 (shiny), 太少的 (too little). Modifying phrases are placed in front of the head noun they describe (e.g., 足够的水 just enough water).		
Noticing and awareness spotlight: Character formation		
好 is made up of two semantic radicals, one for woman and the other for child. Invite students to brainstorm other words that use these same radicals.		

CO IPA 1.1.5	Ask and answer questions using question words	
For example:		
Approaching	Attaining	Expanding
..... 吗? Use of ma 是不是.....? Is or is not?	谁.....? (Who) 什么.....? (What) 哪里.....? (Where) 什么时候.....? (When) 怎么.....? (How) 为什么.....? (Why)	几/多少? (How many) 哪(些).....? (Which)
Form focus: Placement of question words		
Most question words in English occur at the beginning of a sentence. However, question words in Chinese occur in a variety of positions. Generally, question words appear in the same position as the grammatical function they serve in the sentence. For example: 谁参加足球比赛? (Who is going to play the soccer game? ["Who" occurs in subject position]) 你看见几个足球运动员? (How many soccer players did you see? ["How many" is in the # position of the noun phrase # + classifier + noun])		

Noticing and awareness spotlight: Use of 吗? 吧? 呢?
<p>A few particles are commonly used at the end of questions.</p> <p>吧? is used to invite agreement.</p> <p>呢? is a tag question meaning “, and you?”</p> <p>吗? is a question particle that is used when one expects a “yes” or “no” response.</p>

CO IPA 1.1.6	Recount events in simple past time using action verbs with 了 (temporal marker) and dependent time phrase/clause in complex sentence	
For example:		
Approaching	Attaining	Expanding
<p>我们发现.....不管用。</p> <p>We find ... does not work well.</p>	<p>当我们测试尼龙纱窗布的时候，我们看见了水穿过得很快。</p> <p>When we tested the nylon screen, we saw that water passed through it quickly.</p>	<p>经过测试有一个孔的铝箔纸后，我/我们发现了水流得很慢。</p> <p>After testing the aluminum foil with one hole, I/we found that it made the water flow slowly.</p>
<p>Subject pronoun + verb 发现 ...negation particle 不 + adjective 管用。</p>	<p>Dependent adverb of time phrase [当 + simple SVO sentence + 的时候], subject pronoun + verb 看见 + past particle 了 + object phrase (subj + verb + 得 + adverb).</p>	<p>Dependent adverb of time phrase [经过 + simple VO phrase + 后], subject pronoun + verb 发现 + past particle 了 + object phrase (subj + verb + 得 + adverb).</p>
Form focus		
1. Use of 了 as temporal marker		
Simple past time can be communicated using 了 (temporal marker), e.g., action verb + 了 (temporal marker). The temporal marker “了” is positioned either immediately after the main verb or at the end of the sentence/clause.		
2. Use of dependent time phrase/clause in complex sentence		
Mandarin uses adverbs of time and adverb of time phrases to connect two clauses and form one complex sentence.		
The first clause may consist of		
<ul style="list-style-type: none"> An adverb of time placed at the end of the first clause [noun + adverb of time 的时候], e.g., 足球比赛的时候, (While at the soccer game, ...) or an adverb of time phrase that is separated into two parts [当 (part 1) + simple SVO sentence + 的时候 (part 2)], e.g., 当我们测试尼龙纱窗布的时候, (When we tested the nylon screen,...). 		

For example,

Noun/simple SVO sentence + adverb of time phrase 以后.....后 (after), + main clause.

Noun/simple SVO sentence + adverb of time 以前 (before), + main clause.

Noun/simple SVO sentence + adverb of time phrase 当.....的时候 (when/while at), + main clause.

Noticing and awareness spotlight

1. Use of temporal marker “了” with “verb + verb complement” structure

When a two-character “verb + verb complement” structure is used, the temporal marker “了” must be placed after the verb complement.

For example,

[我] 看到了。(I saw.)

However, if the verb complement consists of two characters instead of just one, then “了” can be placed either after the one-character first main verb or after the two-character verb complement.

For example,

他走了出来。(He walked out of there.)

他走出来了。(He walked out of there.)

2. Use of particles 的、地、得

的 (de) is used when an adjective and/or a pronoun modifies a noun. The form is:

Adj./pron. + 的 + Noun, for example, 炎热的夏天 (sweltering summer), 我们的薄膜模型 (our model membrane design)

地 (de) is used when an adverb modifies a verb. The form is:

Adv. + 地 + Verb (unlike in English!), for example, 高兴地欢呼 (cheer happily)

得 (de), as a potential complement, is used as a complement to further describe a main verb/adjective. It is placed after the verb/adjective it describes. The form is:

Verb/adjective + 得 + degree complement

The degree complement can be made up of an adverb or a noun phrase.

For example,





我跑得快。(I ran fast.) (得 + adverb as degree complement)

薄膜有一些小得眼睛都看不见的孔。(Membranes have holes that are too small to see.)

(得 + noun phrase as degree complement).

CO IPA 1.1.7	Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb		
Approaching	Attaining	Expanding	
我们的薄膜模型阻挡有害的东西在外面。 Our model membrane blocks/stops harmful things outside.	我们的薄膜模型（不）让水通过。 Our model membrane should (not) let water pass through.	我们的薄膜模型（不）让水慢慢地通过。 Our model membrane should (not) let water pass through slowly.	
Subj. + Verb + Object + Complement (adv. of location).	Subj. + 让/使-construction [让/使 + direct object + verb].	Subj. + 让/使-construction [让/使 + direct object + adv. of manner 慢慢 + 地 (adv. marker) + verb].	
Form focus: Use of 让/使-construction			
Similar to “把-sentence,” the “让/使-construction” allows one to place the direct object in front of the main verb, which is not typical word order in Chinese. This draws more attention to what is happening to the object itself.			

CO IPA 1.1.8	Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines		
Approaching	Attaining	Expanding	
For example: Left-right: 叫、场 Top-bottom: 吉、只 Left, middle, right: 树、谁 Top, middle, bottom: 复、常 One-part, totally enclosed: 国、回 Partially enclosed: 用, 原			
One- and two-part characters One-part character 我、生 One-part, totally enclosed 国、回 Two-part characters Left-right: 叫、场 Top-bottom: 吉、只	Three-part characters Left, middle, right: 树、谁 Top, middle, bottom: 复、常 Left, top-right, bottom-right: 锋、纷 Top-left, bottom-left, right: 部、剂、劲 Left-top, right-top, bottom: 然、赞 Top, left-bottom, right-top: 死、前	Four + part characters Left-top, right-top, left-bottom, right bottom: 能、舒 Left, top-right, middle-right, bottom-right: 慢、镜 Left, middle, top-right, bottom-right: 游 Left, middle-top, middle-bottom, right: 湖	

Form focus: Formation of Chinese characters
1. Character structure rules
<p>Chinese characters are called “square” characters because no matter how simple or complex, each character fits inside a square. Characters can usually be divided into different parts. These parts form character structures. There are four main structures: one-part structure, two-part structure, three-part structure, and four-part structure. These structures can be further divided into sub-parts.</p> <p>For example,</p> <p>Two-part structures:  (top/bottom),  (left/right)</p> <p>Three-part structures:  (left, top-right, bottom-right),  (top-left, bottom-left, right), etc.</p>
2. Stroke order guidelines
<p>General rules for writing Chinese characters are:</p> <ol style="list-style-type: none"> 1. Horizontal first, then vertical. 2. Top first, then bottom. 3. Left first, then right. 4. Left-slanted first, then right-slanted. 5. Outside first, then inside. 6. Center first, then both sides. 7. With “closed” characters, enter character first, then close it up.

CO IPA 1.1.9	Use a developing understanding of basic units of word formation in Chinese to infer and construct meaning with written text
Form focus: radical → character → compound/word	
1. radical	
<p>A radical is the smallest meaningful orthographic unit in compound characters, for example, 虫 (insect) is used in the character 蛙 (frog). 虫 (insect) can also be a stand-alone character. There are three types of radicals: semantic (give information about character meaning) [手 (hand)], phonetic (give information about character pronunciation) [分 (fen) in the compound 纷 (one after another)], and perceptual (do not give information about character meaning or pronunciation, instead function as visual fillers) [此 (this, these in classical Chinese), however, in the compound 嘴 (mouth) the radical 此 functions as a perceptual radical providing information about neither meaning nor pronunciation].</p>	
2. character	
<p>A Chinese character is a meaningful orthographic unit that is always pronounced as one syllable. Chinese characters have evolved as a writing system over millennia and have developed in various ways.</p>	

Some characters are **pictographs** that were originally drawings of concrete objects, for example, 雨 (rain), the four dots depicting the rain coming down from the sky; others are better described as **ideographs** because they were created as graphic representations of more abstract ideas such as the notion of “above”, 上, the stroke above the horizontal line indicating the idea of “above” or “up.” Another way to create characters was to combine two or more pictographs or ideographs to portray a new meaning, for example, 休 (to rest), a combination of the pictographs for person, 人, and a person leaning against a tree, 木. These types of characters are referred to as **ideogrammatic characters**.

Over 90% of Chinese characters were created as **phono-semantic compound characters** and are made up of a combination of semantic and phonetic radicals. For example, 控 (to control), the semantic radical on the left side, 手 (hand), indicates that the word meaning will include an action with a hand, and the phonetic radical on the right side 空 (kōng), helps the reader with character pronunciation “kòng.”

3. compound

Compounds consist of at least two characters, neither of which is an affix, a character that on its own lacks meaning but when added to other characters becomes a meaningful unit. Most Chinese words are compounds. Compounds have various types of syntactic relationships.

A few compound types:

Verb-Object: 踢足球 (to kick soccer ball)、开球 (to kick of)、发誓 (to pledge)

Verb-Complement: 摔倒 (to fall down)、改进 (to improve and get better)、进来 (to come in)

Subject-Predicate: 天亮 (bright [sky is bright])

Number-Classifier: 各种 (various kinds)、一道 (a ray of...)、一片 (a patch of...)

Adverb-Verb: 慢跑 (to jog [to run slowly])、快走 (to hurry [to walk fast])

Verb-Verb-Noun: 栖息地 (habitat [to stay and rest at a place])

Adjective-Adjective-Noun: 浅桃色 (light peach color)、吉祥物 (mascot [happy and auspicious object])

CO IPA 1.1.10	Support ideas/opinions using compound sentences with adverb 因此		
For example:			
	Approaching	Attaining	Expanding
	海绵是不管用的，因为它太厚了。	海绵太厚了，水不能通过，因此，我们认为海绵是不管用的。	由于毡布不能让水一滴一滴地滴下来，因此，我们认为毡布是不管用的。
	The sponge does not work well, because it is too thick.	The sponge is too thick and it does not allow enough water to pass through, as a result, we think a sponge does not work well.	Due to the fact that the felt lets water drip through slowly, as a result, we think it works well.

....., 因为 (because)..... 因为 (because)....., 所以 (so)....., 因此 (as a result, therefore),	由于 (due to)....., 因此 (as a result, therefore),
Form focus:, 因此 (as a result, therefore),		
因此 (as a result, therefore) is an adverb that can be used instead of the conjunction 因为 in the second clause.		
Noticing and awareness spotlight		
1. Use of 由于 (due to)		
由于 (due to)....., reflects a more formal register and is more likely to be used in written communication.		
2. Simple descriptive sentence (Subj. + 是 + adj. + 的)		
The “是 + adj. + 的” structure is commonly used to describe something or someone. For example, 海绵是 不管用的 。(The sponge does not work.)		

CC IPA 1.1.11	Report events in past time using adverbs of time	
Approaching	Attaining	Expanding
星期一、星期二、星期三、星期四、星期五、星期六、星期天(日) seven days of the week	上个星期 last week	上半个星期/月 earlier this week/month
昨天 yesterday	上次 last time	上半天/年 earlier in the day/year
第一、第二、第三..... ordinals: first, second, third...	第一次 the first time	
今天早上 this morning以前, 这次,	
三点 three o'clockbefore, this time, ...	
	# 天(以)前 # days ago	
	过去 in the past	

Noticing and awareness spotlight	
1. Placement of adverbs of time	
<p>Adverbs of time are typically placed either at the beginning of the sentence or after the subject and before the main verb.</p> <p>Adverb placement is also affected by the type of time described. For example, when the adverb of time indicates a specific point in time, e.g., at 3 o'clock, it is positioned after the subject and before the verb. However, when the adverb of time describes an activity that occurs over a more general period of time, e.g., he slept for three hours, then the adverb must be placed after the verb.</p>	
2. Timeline as a vertical (not horizontal) concept	
<p>If we imagine a vertical line to represent past, present, future time, then the Chinese use of the word 上 (literally “above”) to represent past time and 下 (literally “below”) to indicate future may be easier for English speakers to acquire.</p>	
3. Use of “以”	
<p># 天 (以) 前 (# days ago): In this adverbial phrase, “以” is optional.</p> <p>以前 (before): As a conjunction, “以” cannot be omitted.</p>	

CC IPA 1.1.12	Negotiate turn-taking		
For example:			
	Approaching	Attaining	Expanding
	该我了! My turn! 到你了! Your turn! 下一个是谁? Who's next? 下一个是你吗? Are you the next one?	下一个该轮到谁了? Who is the next? 我觉得该你了。 I think it's your turn. 大家都在等你呢! All of us are waiting for you!	如果你不赶紧, 我们都不能 往下进行。 If you don't hurry, none of us can move on to the next.

Focused Assessment Phase—“Through” activities

Time: Presentational Task (Oral) Activity 2—60 minutes

Presentational Task (Oral) Activity 3—As needed

Groups will prepare and present their improved model membrane design to the class, telling the class what materials they used, if it was successful, and why they think so/why they do not think so. The rest of the class will comment on changes made and make suggestions about what the group could still do to improve their design.

Presentational Task (Oral) Activity 2

1. Engage students at the beginning of this activity by eliciting comments/questions about “improved” model membranes.
2. To introduce students to the IPA, display graphic on page 6 of MMIC IPA 1-IWB and read the Integrated Performance Assessment (IPA) Overview—Teacher Guide (IPA 1-2-TG).
3. In the same groups as before, pass out job cards. Jobs should again rotate so that each student does something new today.
4. On page 7 of the interactive whiteboard, display more detailed information about Part One of IPA, the oral presentational task. Allow students time to read and discuss. If groups have questions, the **Remarkable Recorder** should write them down and the **Terrific Taskmaster** should ask the questions.
5. The primary difference between group presentations #1 and #2 is that the second (final) presentation should focus on how the group *improved* its model membrane design. Elicit from students a list of things they (1) reported on in the first presentation, and (2) will report on in the second (final) presentation. Record student responses on a T-chart (page 8 of MMIC IPA 1-IWB). For example:

第一次口语演示/报告	第二次口语演示/报告
Presentation #1	Presentation #2
你们报告了什么?	在最后的口语演示/报告里, 你们会报告些什么?
What did you report on in this presentation?	What will you report on in the final presentation?

Note: Make it clear that student groups will be graded as a group, not individually, so all members must help one another prepare and practice the language and presentation skills. For all other steps of the IPA, students will receive individual grades.

6. Display MMIC 13-6/IPA 1-1: Presentational (Oral) Scoring Rubric on pages 9-10 of the interactive whiteboard pages and briefly review. Pass out a clean copy of MMIC 13-6/IPA 1-1: Presentational (Oral) Scoring Rubric and give groups time to discuss what scores they think they earned on yesterday’s presentation. The **Remarkable Recorder** should fill this

handout out and be prepared to share it with the teacher during their group's feedback meeting.

7. As students meet with the teacher in presentation groups to go over specific feedback on the first presentations, the other groups will begin preparing their next presentations.
8. Discuss and assign group roles and responsibilities for the second (final) group presentation of the improved model membrane design. Assign the following group presentation tasks:

Chinese Champion

- introduces the group members and their roles and presents the improved model membrane design to the class, along with any changes in materials used
- reports and justifies materials selection for improved design

Magnificent Materials Manager

- reports the answers to questions #1 and #2 of MMIC 13-1 (EiE® {4-8})
- highlights similarities and differences between designs 1 and 2

Remarkable Recorder

- reports the answers to question #3 of MMIC 13-1 (EiE® {4-8})
- highlights similarities and differences between designs 1 and 2

Terrific Taskmaster

- reports the answers to question #4 of MMIC 13-1 (EiE® {4-8})
- highlights similarities and differences between designs 1 and 2, thanks the audience and requests feedback

Any student in the group

- may respond to questions that classmates or the teacher might have.

Group Presentation Management Tip: *The teacher may assign parts of the presentation to each group member using the same structure as the previous presentation, or students may choose their roles. The teacher should decide whether or not each student should do the same or a different part of the presentation than he/she did for Lesson 13.*

9. To highlight Step #5 “Improve” of the engineering design process, groups will display a picture of their first model on the interactive whiteboard, then say what they used in their improved model in comparison/contrast to their first model. Throughout the presentation, group members must highlight how and why their design changed, along with results of the changes made. Introduce these sentence frames for comparing and contrasting their first and improved model membranes (page 13 of MMIC IPA 1-IWB):

Chinese	English
我们用咖啡过滤纸代替有小孔的铝箔纸。	We used the coffee filter instead of the aluminum foil with tiny holes.
有小孔的铝箔纸比海绵更适合。	The aluminum foil with tiny holes is more suitable than the sponge.

10. While students are working on their presentations, call groups one by one to the computer to look at videotaped presentations from Lesson 13. Talk about what students did well and how they could improve their presentation this time. Also review the completed MMIC 13-3: Group Feedback Form, MMIC 13-4: Numbers, Classifiers, Volume, and MMIC 13-5: Self Assessment of Group Work. Lastly, review and discuss the teacher-completed MMIC 13-6/IPA 1-1: Presentational (Oral) Scoring Rubric.
11. Pass out and allow students time to look more carefully through a clean copy of MMIC 13-6/IPA 1-1: Presentational (Oral) Scoring Rubric. This scoring rubric will serve as the final assessment tool for the teacher and as a self-assessment of the second group presentation for the students. Each individual student will complete the self-assessment after the group's final presentation of the improved model membrane design.

Presentational Task (Oral) Activity 3: Oral Presentations

- Each group presents their report to the class, displaying both model membrane designs (the first one as a photo on the interactive whiteboard) as they present for the class to see. Each member of the group will present his or her part of the presentation. Students will need to use these sentence frames for comparing and contrasting their first and improved model membranes (page 13 of MMIC IPA 1-IWB):

Chinese	English
我们用咖啡过滤纸代替有小孔的铝箔纸。	We used the coffee filter instead of the aluminum foil with tiny holes.
有小孔的铝箔纸比海绵更适合。	The aluminum foil with tiny holes is more suitable than the sponge.

- As student groups present, individual students will listen for specific features of the presentation and complete MMIC 13-4: Numbers, Classifiers and Volume.
- Allow students time after each presentation to ask questions, make connections to their own or other model membranes and give positive feedback to each group. Then the groups who watched the presentation should think of one additional way in which the group could improve their design. Allowing time for group discussion, using the following sentence frame (page 14 of MMIC IPA 1-IWB):

Chinese	English
如果/要是你们用咖啡过滤纸代替海绵，我觉得会有更多的水可以通过。	If you use coffee filters instead of the sponge, then I think more water may pass through.

Note: Students will not be creating another model in this unit, but engineers are always thinking of ways in which they can improve their work. Give groups a few minutes to orally discuss some ideas. The teacher will choose one or two groups to present their idea to the presenters.

- After each presentation, the feedback groups will discuss, finalize, and turn in their completed handout MMIC 13-3: *Group Feedback Form* as well as MMIC 13-4: *Numbers, Classifiers and Volume*.
- At the same time, the members of the presenting group will complete their self-assessment using MMIC 13-6/IPA 1-1: *Presentational (Oral) Scoring Rubric*. They should be as honest and objective as possible. Though this rubric is not graded, the goal is to promote reflection and discussion about the teacher's scores and their own.
- Collect all handouts, making sure that they are correctly labeled.

Note: For feedback to be constructive and valuable, make sure to take time to model this and allow students to practice throughout the school year.

Language Function-Form-Vocabulary Connections (Activity 2-3)		
CO IPA 1.2-3.1	Report about things, actions, or events in past time using action verbs with 了 (temporal marker) and adverbs of time	
Approaching	Attaining	Expanding
我们用两张咖啡过滤纸和一块毡布。 We use two coffee filters and one piece of felt.	昨天, 我们用了两张咖啡过滤纸和一块毡布来吸收水。 Yesterday, we used two coffee filters and one piece of felt to absorb water.	上半个星期, 我们使用了两张咖啡过滤纸和一块毡布。 Earlier this week we used two coffee filters and one piece of felt.
No temporal marker, no adverb of time	Temporal marker 了 and adverb of time used	Temporal marker 了 and adverb of time used
Form focus: 用 (to use) + 了 (temporal marker) + adverb of time		
Past time can be communicated using “了”, adverbs of time or both.		
Noticing and awareness spotlight: Position of temporal marker “了”		
The temporal marker “了” is positioned either immediately after the main verb or at the end of the sentence/clause.		

CO IPA 1.2-3.2	Support ideas/opinions using compound sentences with adverb 因此	
Approaching	Attaining	Expanding
我们用了....., 因为咖啡过滤纸让太多的水通过。 We used....., because coffee filters allowed too much water to pass through.	咖啡过滤纸让太多的水通过我们的薄膜模型, 因此, 我们用了..... Coffee filters allowed too much water to pass through our model membrane, as a result we used.....	由于太多的水通过了我们的薄膜模型, 因此, 我们用了..... Due to too much water passing through our model membrane, as a result we used.....
....., 因为 (because)..... 因为 (because)....., 所以 (so)....., 因此 (as a result, therefore),	由于 (due to)....., 因此 (as a result, therefore),
Form focus:, 因此 (as a result, therefore),		
因此 (as a result, therefore) is an adverb that can be used instead of the conjunction 因为 in the second clause.		

Noticing and awareness spotlight: Use of 由于 (due to)
由于 (due to)....., reflects a more formal register and is more likely to be used in written communication.

CO IPA 1.2-3.3	Give emphasis to the specific direct object by using 把 or 让/使 construction and placing the direct object before the verb	
Approaching	Attaining	Expanding
我们用....., 因为太多的水通过我们的模型。 We use..., because too much water passes through our model.	为了让水通过, 我们用了更多的尼龙纱窗布。 In order to let water pass through, we used more pieces of nylon screen.	为了让水流得慢一些, 我们用了更多的毡布。 In order to slow the rate of water flow, we used more pieces of felt.
Subj. + Verb + Object, conjunction + noun phrase + verb + object phrase.	Preposition/coverb (为了 + 让/使-construction [让/使 + Object + Verb], Subj. + Verb + adj. phrase [adv. 更 + adj. 多 + adj. marker 的] + object.	Preposition/coverb (为了 + 让/使-construction [让/使 + Object + Verb + adv. phrase [得 (adv. marker) + adv.]], Subj. + Verb + adj. phrase [adv. 更 + adj. 多 + adj. marker 的] + Object.
你觉得我们的口语报告怎么样?	你觉得如何把我们的口语报告做得更好?	你认为如何使我们的口语报告做得更好?
What do you think of our group presentation?	How do you think we could improve our group presentation?	Do you have any ideas/suggestions for how we could make our group presentation go even better?
Form focus		
Similar to “把-sentence,” the “让/使-construction” allows one to place the direct object in front of the main verb, which is not typical word order in Chinese. This draws more attention to what is happening to the object itself.		
1. Use of 把-construction vs. simple SVO (Subj-verb-direct object)		
A 把-construction (including 把 + direct object + verb + complement) will typically reference something specific that the speaker thinks the hearer knows about, not something unknown to the hearer. If a sentence <i>communicates something that happens to the direct object</i> , then use of the 把-construction is appropriate. For example,		
<ul style="list-style-type: none"> Juan Daniel 把球踢进了。(Subj + 把 + direct object noun phrase + verb + directional complement + past tense marker.) Juan Daniel kicked the soccer ball in. 		

- 你觉得如何把我们的口语报告做得更好? (Subj + verb + question word + 把 + direct object noun phrase + verb + adverbial complement.) How do you think we could improve our group presentation?

However, if there is *no additional information given as to what has happened to the direct object*, use of a 把-construction is incorrect. For example, in the sentence below, the 把-construction is not allowed:

Juan Daniel 想他的青蛙。(Subj. + verb + direct object noun phrase) Juan Daniel misses his frog.

2. 得 as polyphone

To be a polyphone, “duō yīn zì” (多音字) in Chinese, a character must have two or more pronunciations and multiple meanings. Each pronunciation goes with one meaning.

For example:

得	de	说得好 V + 得 + adverb, a particle used between a verb and an adverb that modifies the verb
	děi	得走 verb, meaning “have to, must”
薄	báo	薄的 adj. + 的, meaning “thin”
	bó	薄膜 noun, meaning “membrane”

CO IPA 1.2-3.4	Give reasons for actions/choices/preferences using preposition 为了		
Approaching	Attaining	Expanding	
我们用了....., 因为咖啡过滤纸让太多的水通过。 We used..., because coffee filters allowed too much water to pass through.	为了让水流得慢一些, 我们用了更多的毡布。 In order to slow the rate of water flow we used more pieces of felt.	我们选择.....的原因是..... The reason that we chose... was...	
....., 因为 (because)..... 因为 (because)....., 所以 (so).....	Preposition/coverb (为了 + 让/使-construction [让/使 + Object + Verb + adv. phrase [得 (adv. marker) + adv.]], Subj. + Verb + adj. phrase [adv. 更 + adj. 多 + adj. marker 的] + Object.	Adjective phrase [Subj. pronoun + Verb + Object + 的] + Noun/Subject (原因) + Be Verb 是...	

Noticing and awareness spotlight
1. Placement of preposition/coverb
Prepositions/coverbs such as 为了 (for the purpose of) introduce a noun phrase. Together, the preposition + noun phrase combination are typically placed before the main SVO in the sentence. In sentence initial position they add emphasis.
2. Difference between 的 (de) and 得 (de)
的, an adjective marker, is used after the adjective to modify a noun, e.g., in the noun phrase, adjective + 的 + noun. The “adjective + 的” precede the noun it modifies. 得, an adverb marker, is used to modify a verb. “得 + adverb” follows the verb it modifies, e.g., in the verb phrase, V + 得 + adverb.

CO IPA 1.2-3.5	Describe attributes of persons/place/things using modifying phrases	
For example: 有小孔的铝箔纸 (the aluminum foil that has tiny holes) 厚厚的、用塑料做的海绵 (the sponge that is thick and made of plastic)		
Approaching	Attaining	Expanding
白色的 (white) 银色的 (silver) 厚(厚)的 (thick) 薄(薄)的 (thin) 光亮的 (shiny)	有小孔的 (that has tiny holes) 没孔的 (that does not have holes)	吸收水分的 (that absorbs water) 用纸做的 (that is made of paper)
Attributive adjective [adj. + 的] + Head noun	Relative clause [(没)有 + noun + 的] + Head noun	Relative clause [verb + noun + 的] + Head noun
Form focus: Relative clause [verb + noun + 的] + Head noun		
Modifying phrases can be either attributive adjectives, e.g., 光亮的 (shiny) or relative clauses, e.g., 有 (have) 小孔 (tiny holes) + 的 (that has tiny holes). Modifying phrases are placed in front of the head noun (e.g., 有小孔的铝箔纸).		
Noticing and awareness spotlight		
1. The negation of 有 (have) is 没有		
The negative particle 没 (méi), not 不 (bù), must be used to negate 有 (yǒu) [have]. 没 can be used by itself to express 没有 (méi yǒu). If 没 is used by itself, 有 is assumed such that 没 = 没有.		

2. Adjective repetition
厚厚的 (thick)、薄薄的 (thin) Use of double adjectives is typical for young children.

CO IPA 1.2-3.6	State quantities of materials using numbers and appropriate classifiers	
For example: 一张铝箔纸 (a piece of aluminum foil) 五张咖啡过滤纸 (five coffee filters) 三块纱布 (three pieces of cheesecloth) 两块海绵 (two sponges)		
Approaching	Attaining	Expanding
个 (gè) people and general object 家 (jiā) families and business establishments 件 (jiàn) clothing 棵 (kē) plants 只 (zhī) insects and animals 支 (zhī) rod-shaped objects, e.g., pencil, Chinese paint brush 把 (bǎ) small objects and objects with a handle, e.g., scissors, chair 本 (běn) journals, books and files	张 (zhāng) thin and flat objects, e.g., aluminum foil, coffee filter 块 (kuài) pieces of small things, e.g., felt, sponge 位 (wèi) persons of status, e.g., professor, engineer 碗 (wǎn) things that come in bowls mostly, e.g., noodles, rice, water 场 (chǎng) events and happenings such as episode, e.g., soccer game	滴 (dī) a drop/a drip used for liquid items 对 (duì) couple/pair: modifies anything that comes in pairs 架 (jià) planes and large vehicles and a few smaller electric objects such as radios
Form focus: Number + Classifier + Object (noun)		
Classifiers are used when counting objects (nouns). Almost all nouns have a corresponding classifier. When learning a noun it is always good to learn its classifier.		
Noticing and awareness spotlight		
1. The difference between 二 and 两		
二	两	
1) Counting: e.g., 一、二、三..... 2) Used in ordinal numbers: e.g., 第一 (first)、第二 (second)、第三 (third) 3) As last part of any higher number that ends in two: e.g., 十二 (12)、八十二 (82)	Used whenever a classifier is used to indicate “two of something”, see: Subj. + Verb + 两 + Classifier + Noun	

2. The difference between 只 and 支	
只 (zhī)	支 (zhī)
只 is used for insects and animals.	支 is used for rod-shaped objects.
These two classifiers are homophones. They have the same pronunciation but different uses and meanings.	

CO IPA 1.2-3.7	State exact amount of liquids using fractions/decimals with units of measurement	
For example: 二分之一杯 (a half of a cup) 四分之三杯 (three quarters of a cup) 118.34 毫升 (118.34 milliliters)		
Form focus: Fractions/decimals		
Fractions begin with the denominator, followed by 分之 (parts of), and the numerator, e.g., # (denominator) + 分之 + # (numerator). When reporting decimals, the whole number before the period is expressed as a multi-digit number (e.g., 118.34; before the decimal point, 118 reads as 一百一十八 [one hundred and eighteen]), while the decimal is expressed as single digits (e.g., .34 reads as 点三四 [dot, three, four]).		
Noticing and awareness spotlight		
1. Units of measurement		
Units of measurement can function as nouns or classifiers. When units of measurement are nouns, no classifier is used. For example: Unit of measurement as noun: 118.34 毫升 (118.34 milliliters), 11.5 杯 (11.5 cups) Unit of measurement as classifier: 150 毫升水 (150 milliliters of water), 一杯水 (a cup of water) Other such units of measurement are 盎司 (ounce), 英尺 (foot), 英里 (mile), 磅 (pound), etc.		
2. 杯 (cup)		
杯 (cup) as physical object: use the classifier “个” (e.g., 一个杯子 [one cup]) 杯 (cup) as unit of measurement: do not use classifier (e.g., 11.5 杯 [11.5 cups]) 杯 (cup) as classifier: used as a classifier (e.g., 一杯水 [a cup of water])		

CO IPA 1.2-3.8	Describe attributes of something/someone using the existential verb 有 with a modifying noun phrase	
Approaching	Attaining	Expanding
水太多/太少/正好。	(在)杯子里有太多/太少/足够/118.34 毫升的水。	有太多/太少/足够/118.34 毫升的水通过了薄膜模型。

There is too much/too little/just right water. 我们有太多/太少/足够的水。 We have too much/too little/just right water.	There is too much/too little/just right/118.34 milliliters of water in the cup.	There is too much/too little/just right/118.34 milliliters of water that passed through the model membrane.
Subj. (noun) + [be verb is omitted] + adverb 太多/太少/正好 too much/too little/just right.	Locative phrase + existential verb (有) + modifying noun phrase (adj. + 的 + noun).	Existential verb (有) + modifying noun phrase (adj. + 的 + noun) + verb phrase.
Focus on form		
1. Locative phrase + existential verb (有) + modifying noun phrase		
The locative phrase, identifying the place where something exists, begins the sentence. The locative phrase is followed by the existential verb (有 [have]) and a modifying noun phrase.		
2. Modifying noun phrase [adj. + 的] + Head noun		
Modifying phrases can be attributive adjectives followed by the particle 的, e.g., 光亮的 (shiny), 太少的 (too little). Modifying phrases are placed in front of the head noun they describe (e.g., 足够的水 just enough water).		
Noticing and awareness spotlight: Character formation		
好 is made up of two semantic radicals, one for woman and the other for child. Invite students to brainstorm other words that use these same radicals.		

CO IPA 1.2-3.9	Use a locative phrase 在...里/在...中 to identify the topic	
Approaching	Attaining	Expanding
在这里，我们用两张咖啡过滤纸和一块毡布。 In here, we use two coffee filters and one piece of felt here.	在我们的第一个薄膜模型的设计中，我们用了一块海绵、三张咖啡过滤纸，和一块毡布。 In our first model membrane design we used a sponge, three coffee filters, and one piece of felt.	在我们的经改进的薄膜模型的设计中，我们用了一块海绵、三张咖啡过滤纸，和一块毡布。 In our improved model membrane design we used a sponge, three coffee filters, and one piece of felt.
Topic phrase (在 zài + adverb of location), subj pronoun + verb	Topic as noun phrase [在 zài + object phrase (possessive pronoun + noun phrase) + 中], subj. pronoun + verb	Topic as noun phrase [在 zài + object phrase (possessive pronoun + modified noun phrase) + 中], subj. pronoun + verb

Form focus: Use of “在 zài ... 中” as topic phrase
<p>在 zài ... 中: describing time or location “in” or “inside of”</p> <ul style="list-style-type: none"> 在这些薄膜模型设计中: In these model membrane designs 在足球场上: on the soccer field
Noticing and awareness spotlight: Providing detail with a modifying phrase
<p>To provide more detail within a locative phrase, we can add a modifying phrase, for example, “在 (zài) + modifying phrase + (的) + noun (+ locative particle).”</p> <p>There are a few different ways to construct a modifying phrase:</p> <ol style="list-style-type: none"> Adj + 的: For example, 在我们的经改进的薄膜模型的设计中 (in our improved model membrane design) # Adj. + CL + noun + 的 + noun: For example, 在我们的第一个薄膜模型的设计中 (in our first model membrane design)

CO IPA 1.2-3.10	Make comparison between two things using “A + 比 (comparison marker) + B + (更) + adjective” structure	
Approaching	Attaining	Expanding
<p>铝箔纸跟毡布不一样。</p> <p>The aluminum foil and the felt are different.</p>	<p>有小孔的铝箔纸比海绵更适合。</p> <p>The aluminum foil with tiny holes is more suitable than the sponge.</p>	<p>有小孔的铝箔纸比海绵更能控制水流。</p> <p>The aluminum foil with tiny holes can control the water flow better than the sponge.</p>
A + 跟 (and) + B + 一样 (same)/不一样 (different)	A + 比 + B + (更) + adj.	A + 比 + B + + (更) + verb phrase
Form focus: A + 比 + B + (更) + Adj.		
<p>“A” and “B” can be either nouns or noun phrases.</p> <p>比 (comparison marker) is positioned between A and B with the adjective placed after B.</p>		
Noticing and awareness spotlight: Use of 更 (even, even more)		
<p>The adverb 更 is placed before the adjective. It is often omitted if the adjective is monosyllabic; it is typically used if the adjective is multisyllabic.</p>		

CO IPA 1.2-3.11	Suggest an alternative idea using serial verb construction with pivotal noun phrase	
Approaching	Attaining	Expanding
<p>我们用有小孔的铝箔纸, 没用海绵。</p>	<p>我们用咖啡过滤纸代替有小孔的铝箔纸。</p>	<p>为什么不用毡布代替尼龙纱窗布?</p>

We used the aluminum foil with tiny holes, we didn't use the sponge.	We used the coffee filter instead of the aluminum foil with tiny holes.	Why don't we use the felt instead of the nylon screen?
Parallel SVO sentence construction used to first confirm and then disconfirm.	Subj. + Verb ₁ + Object ₁ + Verb ₂ + Object ₂ .	为什么不 (why not) + Verb ₁ + Object ₁ + Verb ₂ + Object ₂ .
Form focus: Subj. + Verb ₁ + Object ₁ + Verb ₂ + Object ₂		
A serial verb construction refers to a sentence with two or more verbs that are connected by one and the same event. One type of serial verb constructions is called the pivotal construction. A pivotal construction contains a noun phrase (Object ₁) that "pivots" between functioning as the object of Verb ₁ and the subject of Verb ₂ .		
Noticing and awareness spotlight: Use of 没(有)		
The negative particle 没(有) is also used to indicate that an action DID NOT happen in the past; "不 (bù) + verb" is used to indicate that an action DOES NOT happen in the present or WILL NOT happen in the future. For example:		
<ol style="list-style-type: none"> 1. 我<u>不</u>吃早饭。I don't eat breakfast. (habit) 2. 我<u>没</u>吃早饭。I haven't eaten breakfast. 		

CO IPA 1.2-3.12	Predict cause-effect relationship using hypothetical conditional sentences with 如果/要是....., (那么)..... and the adjectival verb 可能		
Approaching	Attaining	Expanding	
我想有孔的铝箔纸可能更好。它会阻挡太多的水通过。 I think the aluminum foil with holes is perhaps better. It will block too much water from passing through.	如果/要是你们用咖啡过滤纸代替海绵, 我觉得会有更多的水可以通过。 If you use coffee filters instead of the sponge, then I think more water may pass through.	如果/要是你们用咖啡过滤纸代替海绵, 我觉得薄膜模型的效果可能会更好, 因为咖啡过滤纸比海绵能少吸收水分。 If you use coffee filters instead of the sponge, then I think the model membrane may work better, because coffee filters absorb less water than a sponge.	
可能 (maybe, perhaps)	要是/如果.....,(可能).....	要是/如果.....,(可能)....., 因为.....	

Form focus: 要是/如果.....,(可能).....
<p>The hypothetical conditional sentence structure consists of two parts:</p> <ul style="list-style-type: none"> • The If-clause (要是/如果) expressing the conditional hypothesis • The main clause expressing the respective result; usually contains adverb “perhaps/maybe” (可能)
Noticing and awareness spotlight: the difference between 能 and 会
<p>能 and 会 are both auxiliary verbs meaning “can” or “may.” They are used interchangeably. However, there is a difference between them:</p> <p>会 (hui) specifies a learned, acquired skill or a mental ability;</p> <p>能 (néng) means having the physical ability or opportunity to do something unless a condition prevents it.</p> <p>For example:</p> <p>我会游泳, 可是我今天不能游泳, 因为我的腿受伤了。</p> <p>I can swim, but I cannot today, because my leg is injured.</p>

CC IPA 1.2-3.13	Give a command using serial verb construction		
Approaching	Attaining	Expanding	
用/试一试海绵吧! Use/Try the sponge!	我建议用/试一试..... I suggest we use/try...	为什么不/试一试毡布? Why don't you use/try the felt?	
我们用/试一试海绵吧! Let's use/try sponge!	你可以用/试一试..... You may use/try.....	我们最好用/试一试毡布。 You'd better use/try the felt.	
Verb + noun + 吧 (ba)!	Subj. + Verb ₁ + Verb phrase (verb ₂ + noun phrase)	为什么不 (Why not) + Verb + Object	
Form focus: Subj. + Verb ₁ + Verb phrase (verb ₂ + noun phrase)			
A serial verb construction refers to a sentence with two or more verbs that are connected by one and the same event. In this type of serial verb construction the second verb is a verb phrase that functions as the object of the sentence.			
Noticing and awareness spotlight: Use of 吧 (ba)			
吧 (ba) is a particle which is used at the end of a sentence to indicate a suggestion.			

CC IPA 1.2-3.14	Report events in past time using adverbs of time	
Approaching	Attaining	Expanding
星期一、星期二、星期三、 星期四、星期五、星期六、 星期天(日) seven days of the week 昨天 yesterday 第一、第二、第三..... ordinals: first, second, third... 今天早上 this morning 三点 three o'clock	上个星期 last week 上次 last time 第一次 the first time 以前, 这次,before, this time, ... #天(以)前 # days ago 过去 in the past	上半个星期/月 earlier this week/month 上半天/年 earlier in the day/year
Noticing and awareness spotlight		
1. Placement of adverbs of time		
<p>Adverbs of time are typically placed either at the beginning of the sentence or after the subject and before the main verb.</p> <p>Adverb placement is also affected by the type of time described. For example, when the adverb of time indicates a specific point in time, e.g., at 3 o'clock, it is positioned after the subject and before the verb. However, when the adverb of time describes an activity that occurs over a more general period of time, e.g., he slept for three hours, then the adverb must be placed after the verb.</p>		
2. Timeline as a vertical (not horizontal) concept		
<p>If we imagine a vertical line to represent past, present, future time, then the Chinese use of the word 上 (literally "above") to represent past time and 下 (literally "below") to indicate future may be easier for English speakers to acquire.</p>		
3. Use of “以”		
<p>#天(以)前 (# days ago): In this adverbial phrase, “以” is optional.</p> <p>以前 (before): As a conjunction, “以” cannot be omitted.</p>		

CC IPA 1.2-3.15	Express a personal opinion		
Approaching	Attaining	Expanding	
我觉得／想 I feel like/think... 也许／可能 (maybe, perhaps)	在我看来..... It seems to me like... 对我来说, In my opinion, ... 我认为..... I believe/think ...	我建议..... I suggest... 我的看法是..... My thoughts are... 我是说..... What I mean is...	

CC IPA 1.2-3.16	Express agreement/disagreement		
Approaching	Attaining	Expanding	
好。 Good. 我同意。 I agree. 我也是／同意。 I also + verb (am/agree). 对。 Exactly/Correct. 不。 No. 不好。 Not good. 不同意。 I don't agree with you. 不对。 Not exactly.	你说得对。 You are correct. 你完全正确。 You're absolutely right. 我也是这么认为的。 I think so too. 我也不这么认为。 I don't think so either. 我不是这么认为的。 I don't think so. 是, 可是你不觉得.....? Yes, but don't you think... 我觉得我不同意。 I'm afraid I have to disagree.	我的想法跟你的一样。 I share your thoughts. 我赞成。 I agree (more formal). 我完全赞同。 I agree with you entirely. 我的意见跟你的不同。 My suggestions are different from yours. 我想和你讨论讨论..... I must take issue with you on that. 然而 However	

CC IPA 1.2-3.17	Ask for clarification about feedback/advice/idea		
Approaching	Attaining	Expanding	
<p>你说什么? What did you say?</p> <p>我不懂。 I didn't understand that.</p> <p>什么意思? What does it mean?</p>	<p>我没听懂, 请你再说一次。 I didn't understand, could you please say it again?</p> <p>你是不是说..... Did you say...</p> <p>你说的是.....的意思吗? Do you mean...?</p>	<p>你可不可以重复一遍? Could you repeat it one more time?</p> <p>请你再跟我讲一讲。 Please explain it to me one more time.</p> <p>你可以给我解释一下吗? Could you explain that to me?</p>	
Form focus: Nominalization using 的 (e.g., 你说的是...)			
<p>A verb/verb phrase can become a noun by placing the particle 的(de) after it. For example, the verb phrase 你说 (you say) can function as a noun phrase 你说的, meaning “what you say” in 你说的是 (What you say is...).</p> <p>If the subject is expressed in the verb phrase 你说 (you say), it is likely that the noun phrase, 你说的 (what you say), will function as the direct object in the sentence, in this case, the “what” you say.</p> <p>If the direct object is expressed in the verb phrase, e.g., 种水果 (grow fruit), it is likely that the noun phrase, 种水果的, will function as the subject of the sentence, as that is the information that is lacking.</p>			
Noticing and awareness spotlight: Use of 吗? 吧? 呢?			
<p>A few particles are commonly used at the end of questions.</p> <p>吧? is used to invite agreement.</p> <p>呢? is a tag question meaning “, and you?”</p> <p>吗? is a question particle that is used when one expects a “yes” or “no” response.</p>			

CC IPA 1.2-3.18	Accept feedback/advice/idea		
Approaching	Attaining	Expanding	
行。 OK. 好主意。 Good idea. 可以。 Yes, I can.	不错。 Not bad. 你说得对。 You are correct. 我会照你说的做。 I will take your idea.	高明。 Brilliant. 多谢指教。 Thank you for your advice. 我会吸取你的建议。 I will accept your suggestion.	

Feedback Phase— “Beyond” activity

Teacher will facilitate an informal discussion about engineers and an analysis of effective model membrane designs with the whole class.

Time: 20 minutes

1. Ask students to turn to a partner and share something they learned about how to effectively design a model membrane. In general, what seemed to work well across the groups?
2. Discuss student observations as a whole class.
3. Invite students to brainstorm responses to the following questions about engineers.

Chinese	English
工程师做什么? 答案: 做模型、问问题、改进模型等等	What do engineers do? Answer: <i>make models, ask questions, improve models, etc.</i>
工程师有哪些性格特点? 答案: 细致入微、持之以恒、好奇心强、想象丰富等等	What personal characteristics might serve engineers well? Answer: <i>attend to detail, persistent, curious, imaginative, etc.</i>

4. Record and discuss responses.

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

Vocabulary List

Content-obligatory (CO)

了解 Recognize			
Pīnyīn	Characters	English meaning	Parts of speech
hào qí de	好奇的	curious	adjective
yí guàn de	一贯的	persistent	adjective
yǒu xiǎng xiàng lì de	有想象力的	imaginative	adjective
zhù yì xì jié	注意细节	attentive to detail	adjective
识记 Produce			
Pīnyīn	Characters	English meaning	Parts of speech
bái sè de/mǐ sè de	白色的/米色的	white/beige	adjective
bàn gè	半个	one half	noun
bēi	杯	cup	noun
bó de	薄的	thin	adjective
bó mó	薄膜	membrane	noun
bù zhòu	步骤	step	noun
cái liào	材料	materials	noun
cè liáng	测量	to measure	verb
chéng gōng	成功	success	noun
fèn shù	分数	fraction	noun
gǎi jìn	改进	to improve	verb
gǎi jìn	改进	improve	verbal phrase
gài zi	盖子	lid	noun
gōng chéng shè jì bù zhòu	工程设计步骤	Engineering Design Process	noun
gōng chéng shī	工程师	Engineer	noun
guān chá	观察	to observe	verb
hǎi mián	海绵	sponge	noun
háo shēng	毫升	milliliter	noun
hòu	厚	thick	adjective
jì lù	记录	to record	verb
kā fēi guò lǜ zhǐ	咖啡过滤纸	coffee filter	noun
kē xué jiā	科学家	Scientist	noun

lǚ bó zhǐ	铝箔纸	aluminum foil	noun
méi yǒu dòng/méi yǒu kǒng	没有洞/没有孔	does not have holes	verb
méi yǒu yòng/bù guǎn yòng	没有用/不管用	does not work well	verbal phrase
mó xíng	模型	to model/modeling	verb
ní lóng shā chuāng bù	尼龙纱窗布	nylon screen	noun
píng huá	平滑	smooth	adjective
qù jiě jué shí jì wèn tí	去解决实际问题	to solve real-world problems	verbal phrase
róng qì	容器	container	noun
shā bù	纱布	cheesecloth	noun
shǎn liàng	闪亮	shiny	adjective
shè jì	设计	to design	verb
shè jì	设计	plan	verbal phrase
shēng wù gōng chéng shī	生物工程师	Bioengineer	noun
shí yàn	实验	experiment	verb/noun
shì yí shì xīn de xiǎng fǎ	试一试新的想法	to try out new ideas	verbal phrase
sì fēn zhī yī	四分之一	one fourth/quarter	noun
sī kǎo	思考	imagine	verbal phrase
tǐ jí	体积	volume	noun
tí wèn	提问	ask	verbal phrase
xiǎo shù	小数	decimal	noun
yè tǐ liáng bēi	液体量杯	measuring cup	noun
yǒu dòng/yǒu kǒng	有洞/有孔	has holes	verb
yǒu liǎng gè kǒng de lǚ bó zhǐ	有两个孔的铝箔纸	aluminum foil with two holes	noun phrase
yǒu yí gè kǒng de lǚ bó zhǐ	有一个孔的铝箔纸	aluminum foil with one hole	noun phrase
yǒu yòng/guǎn yòng	有用/管用	works well	verbal phrase
yùn yòng xiǎng xiàng lì	运用想象力	to use imagination	verbal phrase

zhān bù	毡布	felt	noun
zhì zuò	制作	create	verbal phrase
zhǐ zuò de	纸做的	made of paper	adjective
zǔ hé	组合	combination	noun

Content-compatible (CC)

了解 Recognize			
Pīnyīn	Characters	English meaning	Parts of speech
bǐ jiào jí	比较级	comparative expression	noun
biǎo dá de	表达的	presentational	adjective
biǎo xiàn	表现	performance	noun
biāo zhǔn	标准	criterion	noun
cè shì	测试	assessment	noun
fǎn kuì	反馈	feedback	noun
fǎn kuì quān	反馈圈	feedback loop	noun
fù hé jù	复合句	compound sentence	noun
huǒ bàn	伙伴	partner	noun
jiāo liú de	交流的	interpersonal	adjective
lǐ jiě de	理解的	interpretive	adjective
lián dòng cí jié gòu	连动词结构	serial verb combination	noun
liàng cí	量词	classifiers	noun
píng fēn biǎo	评分表	rubric	noun
píng gū	评估	to evaluate	verb
qīng chǔ de yǎn shì	清楚地演示	clearly present	verbal phrase
quán bān	全班	whole class	noun
shì jué jiē chù	视觉接触	eye contact	noun
shù liàng	数量	quantity	noun
tóng xué píng gū	同学评估	peer evaluation	noun
xiǎo zǔ	小组	small group	noun
xiū shì yǔ	修饰语	modifying phrases	noun
zhèng què de shǐ yòng	正确地使用	correctly use	verbal phrase

zhì liàng	质量	quality	noun
zhǔn què de huì bào	准确地汇报	accurately report	verbal phrase
zì wǒ píng gū	自我评估	self-assessment	noun
zōng hé de	综合的	integrated	adjective
识记 Produce			
Pīnyīn	Characters	English meaning	Parts of speech
bǎ tā zhé qǐ lái	把它摺起来	to fold something	verb
bó	薄	thin	adjective
bù fèn	部分	some	adverb
cái liào guǎn lǐ yuán	材料管理员	Magnificent Materials Manager	noun
cè shì	测试	to test	verb
chuān (dòng/kǒng)	穿 (洞/孔)	to pierce holes	verb
dà xiǎo shì zhōng	大小适中	right-sized	adjective
dī	滴	to drip	verb
fēn céng	分层	to layer	verb
fù zé	负责	to be responsible for	verb
gèng	更	even more	adverb
gōng zuò guǎn lǐ yuán	工作管理员	Terrific Taskmaster	noun
guǎn yòng/bù guǎn yòng	管用/不管用	useful/not useful	adjective
hòu	厚	thick	adjective
jì lù yuán	记录员	Remarkable Recorder	noun
jiǎn	剪	to cut	verb
kǒng	孔	small hole	noun
kuài	快	fast	adverb
màn	慢	slow	adverb
méi yǒu	没有	none	adverb
miáo shù	描述	to describe	verb
quán bù	全部	all	adverb
shì hé	适合	suitable	adjective
tài duō	太多	too much	adverb phrase

tài shǎo	太少	too little	adverb phrase
yǎn shì zhì jiǎn yuán	演示质检员	Polished Presenter	noun
yuē	约	approximately	adverb
zhé	折	to bend	verb
zhèng hǎo	正好	just right/exact amount	adverb phrase
zhōng	中	medium	adverb
zhōng wén dū chá yuán	中文督察员	Chinese Champion	noun
zuì duō	最多	at most	adverb phrase

综合能力测试

表达能力 (口头)

- 小组演示改进的薄膜模型

理解能力

- 仔细听老师朗读第七章并完成测试
- 独立阅读第七章并完成测试

表达能力 (书面)

- 写一封电子邮件向访问工程师表示感谢

交流能力

- 按照工程设计程序两人一组排序
- 两人一组讨论一下 *Juan Daniel* 的故事，然后问一问对方有关的文化知识

Integrated Performance Assessment

Presentational Task (Oral)

- Group presentation of improved model membrane

Interpretive Tasks

- Listen to teacher read aloud from Chapter 7 and complete assessment
- Independently read from Chapter 7 and complete assessment

Presentational Task (Written)

- Follow-up email communication and thank-you for visiting engineer

Interpersonal Tasks

- Joint sequencing of science and engineering processes
- Partner interview about *Juan Daniel* story and culture learning

综合能力测试概述—教师口述脚本

你们已经在学习很多学科知识的方方面面——比方说科学、技术、工程、数学和中文。现在是你们表现的时候了。接下来的这几天，你们会有机会告诉我你们在薄膜模型这个单元里学到的东西。我想听一听你们能用多少中文！这个综合能力测试包括一系列任务项目。你的测试结果会保存在你的档案夹里。

首先，每个小组会向全班演示一下你们改进过的薄膜模型。我会用《口语演示评分表》来评价你们的演示。你们已经见过这个《口语演示评分表》啦。像以前一样，你们也会有机会发表或者接受反馈意见。

另外，这个综合能力测试还有更多的内容。下周内，你们会继续学习《Juan Daniel 和他的幸运蛙》的故事。你们会听故事，也会独立地读故事。你要完成两个测试。这两个测试会告诉我你们是不是理解 Juan Daniel 的故事。然后，我会请你们两个人一组跟我谈谈你们学到的科学方法和工程设计程序；还有，中国、萨尔瓦多和美国文化有什么相同和不同的地方。你也会有机会谈一谈 Juan Daniel 的故事。

最后，这个综合能力测试会请你们，以小组为单位，向 _____（工程师）写一封表示感谢的电子邮件。你们可以告诉他/她你们对薄膜模型做了哪些改进；它是否成功了；还有你们学到了什么东西。在你们定稿以前，你们会有机会读一读其他小组写的电子邮件。你们可以给他们一些反馈意见。当然，你们也会得到别的小组给你们的反馈意见。

IPA Overview-Teacher Guide

You have been learning about so many facets of Science, Technology, Engineering, Math and Mandarin. Now is your time to shine. Over the next few days you will have a chance to show me all the things you have learned during the Model Membrane unit. I am looking forward to seeing just how much Chinese you can use! This performance assessment is made up of a series of tasks that will be evaluated and placed in your portfolio.

First, each group will prepare and present its improved model membrane to the rest of the class. I will be using the *Presentational (Oral) Scoring Rubric* that you have already looked at to evaluate each group's performance. You will also have a chance to give and receive feedback from your peers just like before.

There is more to this performance assessment, though. Over the next week, you will be returning to the *Juan Daniel and the Fútbol Frog* story, listening to and independently reading the book, and then showing me what you understood from the story by completing two assessments. Then, I will invite pairs of students up to talk with me about the scientific method, the engineering design process, and how Chinese, Salvadoran and US cultures are similar and different. You will also have a chance to talk about the *Juan Daniel* story.

The final part of this performance assessment will take place in your work groups. You'll have a chance to write a thank-you email to _____ (the engineer), telling him/her about the changes you made to your improved model, how well it worked and what you learned. You'll be expected to give feedback to other groups on their emails and you'll receive feedback as well, before writing your final polished email.

口语演示评分表

MMIC EIE® 《薄膜模型单元》，第十三课：表达能力（口头）

日期: _____ 学生 1: _____ 学生 2: _____

学生 3: _____ 学生 4: _____

- 4 = 优: 超越要求, 对教学目标的理解和运用的能力卓越
 3 = 良: 完善要求, 对教学目标的理解和运用的能力良好
 2 = 及格: 达到要求, 对教学目标的理解和运用的能力一般
 1 = 不及格: 达不到要求, 对教学目标的理解和运用的能力有限

- 必要条件: _____ 1. 都要讲话。
 _____ 2. 只用中文。
 _____ 3. 完成并且上交自我评价的《口语演示评分表》。

	标准	得分	评语
学科知识	准确地汇报液体量杯里收集了多少水	4 3 2 1	
	汇报薄膜模型是否成功	4 3 2 1	
	清楚地汇报薄膜模型有哪些部分成功了和成功的原因	4 3 2 1	
	清楚地汇报薄膜模型有哪些部分没有成功了和没有成功的原因	4 3 2 1	
	清楚地演示和评价薄膜模型的测试结果	4 3 2 1	
	清楚地演示为什么新的薄膜模型是对第一个薄膜模型的改进	4 3 2 1	
	**仅用于综合能力测试!		
	学科知识得分:	_____/24	

	标准	得分	评语
语言控制	正确用量词和计量单位	4 3 2 1	
	正确使用整数、分数和小数报告数量	4 3 2 1	
	准确地使用形容词短语来描述材料的属性	4 3 2 1	
	准确地使用“了”和时间副词来表示过去式汇报材料选择和测试结果	4 3 2 1	
	正确使用有副词“因此”或者“为了”的复合句	4 3 2 1	
	正确使用双动词结构来解释材料选择并汇报结果	4 3 2 1	
	正确使用比较级来比较第一个和改进的薄膜模型 **仅用于综合能力测试!	4 3 2 1	
	语言控制得分: _____/28		
演示技巧	介绍全部小组成员的名字和组内分工角色	4 3 2 1	
	和听众保持视觉交流并用自然的面部表情和肢体语言表现自信心	4 3 2 1	
	口头表达清楚自如	4 3 2 1	
	开头致敬结尾感谢	4 3 2 1	
	虚心看待评语并认真回答问题	4 3 2 1	
	演示技巧得分: _____/20		

总分: _____/72

66-72 优

58-65 良

50-64 及格

0-49 不及格

Presentational (Oral) Scoring Rubric

MMIC *Engineering is Elementary*® Model Membrane Unit, IPA 1: Presentational (Oral) Task

Date: _____ Student 1: _____ Student 2: _____
 Student 3: _____ Student 4: _____

- 4 = Exceeding: Exceeds expectations and demonstrates exceptional command of unit goals.
- 3 = Achieving: Is above average and demonstrates very good command of unit goals.
- 2 = Partially achieving: Meets expectations and demonstrates adequate command of unit goals.
- 1 = Not achieving: Falls short of expectations and demonstrates poor command of unit goals.

- Non-negotiables:** _____ **1. All students must talk.**
 _____ **2. All students must speak only in Chinese.**
 _____ **3. All students must turn in self-assessments using this same rubric.**

Academic Content	Criteria	Scale	Comments
	Accurately report amount of water collected in the liquid measuring cup.	4 3 2 1	
	Report whether or not the model membrane was successful.	4 3 2 1	
	Clearly report what did work well with the model membrane and why.	4 3 2 1	
	Clearly report what didn't work well with the model membrane and why.	4 3 2 1	
	Clearly present an evaluation of the results of the model membrane test.	4 3 2 1	
	Clearly present how the new model membrane design was an <i>improvement</i> on the original design. **For IPA only!	4 3 2 1	
	Academic Content Total:	_____/24	

	Criteria	Scale	Comments
Language Control	Correctly use classifiers to report materials and units of measurement.	4 3 2 1	
	Correctly use numbers/fractions/decimals to report quantities.	4 3 2 1	
	Accurately use modifying phrases to describe attributes of materials.	4 3 2 1	
	Accurately use action verbs with 了 (temporal marker) and adverbs of time to report materials selection and test results in past time.	4 3 2 1	
	Correctly use compound sentences with adverb 因此 or preposition 为了	4 3 2 1	
	Accurately use serial verb construction with pivotal noun to justify materials selection and report results.	4 3 2 1	
	Accurately use comparative expressions to make comparisons between original and improved model membrane models. **For IPA only!	4 3 2 1	
	Language Control Total:		_____/28
Presentation Skills	Introduce all group members by name and group role.	4 3 2 1	
	Maintain eye contact with the audience and show genuine enthusiasm with appropriate facial expressions and body language.	4 3 2 1	
	Speak confidently and clearly.	4 3 2 1	
	Open/close presentation by greeting/thanking the audience.	4 3 2 1	
	Respond respectfully to student comments/questions after the presentation.	4 3 2 1	
	Presentation Skills Total:		_____/20

Final Points: _____/72

66-72 Exceeding

58-65 Achieving

50-64 Partially achieving

0-49 Not achieving

- 1 昨天，我们组用了哪些材料来做我们的薄膜模型？
- 2 昨天，我们组向薄膜模型里倒了多少水？
- 3 从昨天开始应该有多少水通过我们的薄膜模型？
- 4 从昨天的演示中你能找出一些正确使用量词的例子吗？请说一说你的例子。



在小组内，互相讨论这四个问题的答案，然后让中文督察员跟大家汇报答案。


中文督察员	跟大家报告小组的答案（以上四个问题）
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MMIC 13-1

姓名：_____ 日期：_____

设计 # _____

工程设计步骤：
制作！



说明：仔细观察你们制作的薄膜模型，回答下列问题。

1. 24 小时后，液体量杯里收集了多少水？

2. 你们的薄膜模型让足够的水通过了吗？太多、太少还是正好？

3. 你们薄膜模型的哪些部分成功了？为什么？

4. 你们薄膜模型的哪些部分不理想？为什么？

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Translation of Engineering is Elementary® "Model Membrane" Unit, 4-8
Duplication Permitted

MMIC 13-1 CH

活动#1

小组活动之前

小组成员	任务
记录员	找出之前完成的MMIC 13-1笔记
材料管理员	领取第一个薄膜模型
工作管理员	领取新的MMIC 13-1 笔记

活动#1

小组活动进行中

小组成员	任务
中文督察员	帮助大家的中文提醒大家说中文
记录员	记录答案
材料管理员	测量有多少水通过了薄膜模型
工作管理员	协调讨论 大家都有均等的机会

小组活动之后

活动#1

小组成员	任务
记录员	把之前完成的MMIC 13-1笔记和最新完成的MMIC 13-1笔记放在科学文件夹里
材料管理员	把薄膜模型放回原处
所有组员	准备大组讨论

综合能力测试

表达能力 (口头)	<ul style="list-style-type: none"> 小组演示改进的薄膜模型
理解能力	<ul style="list-style-type: none"> 仔细听老师朗读第七章并完成测试 独立阅读第七章并完成测试
表达能力 (书面)	<ul style="list-style-type: none"> 写一封电子邮件向访问工程师表示感谢
交流能力	<ul style="list-style-type: none"> 按照工程设计程序两人一组排序 两人一组讨论一下Juan Daniel 的故事，然后问一问对方有关的文化知识

综合能力测试（一）步骤：
表达能力（口头）

	老师做……	学生做……
1	组织老师和小组面谈，给小组意见反馈	准备和练习对改进的薄膜模型的最后小组演示
2	用《口语演示评分表》评价每一个小组的口头演示	小组演示并用《口语演示评分表》自我评价
3		完成小组意见反馈表

记录员	记录组员的问题
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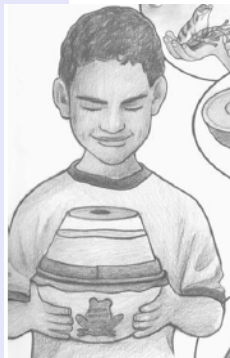
工作管理员	负责问老师问题
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第一次口语演示（报告）	第二次口语演示（报告）
你们报告了什么？	你们将会报告什么？一样的内容？还是会加上一些新的内容？
1. 2. 3. 4. 5.	

MMIC 13-6

- 4 = 优: 超越要求, 对教学目标的理解和运用的能力卓越
- 3 = 良: 完善要求, 对教学目标的理解和运用的能力良好
- 2 = 及格: 达到要求, 对教学目标的理解和运用的能力一般
- 1 = 不及格: 达不到要求, 对教学目标的理解和运用的能力有限

- 必要条件:
- _____ 1. 都要讲话。
 - _____ 2. 只用中文。
 - _____ 3. 完成并且上交自我评价的《口语演示评分表》。



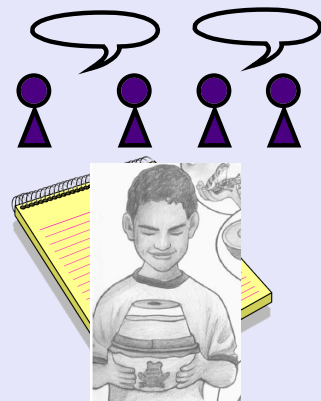
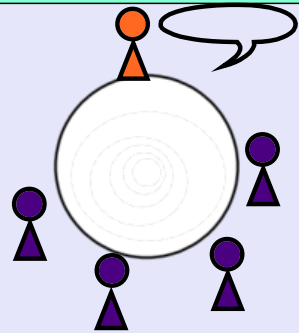
	标准	得分	评语
汇报内容	准确地汇报液体量杯里收集了多少水	4 3 2 1	MMIC 13-6
	汇报薄膜模型是否成功	4 3 2 1	
	清楚地汇报薄膜模型有哪些部分成功了和成功的原因	4 3 2 1	
	清楚地汇报薄膜模型有哪些部分没有成功了和没有成功的原因	4 3 2 1	
	清楚地演示和评价薄膜模型的测试结果	4 3 2 1	
	清楚地演示为什么新的薄膜模型是对第一个薄膜模型的改进 **仅用于综合能力测试!	4 3 2 1	
学科知识得分:		____/24	
语言控制	正确使用量词和计量单位	4 3 2 1	
	正确使用整数、分数和小数报告数量	4 3 2 1	
	准确地使用形容词短语来描述材料的属性	4 3 2 1	
	准确地使用“了”和时间副词来表示过去式汇报材料选择和测试结果	4 3 2 1	
	正确使用有副词“因此”的复合句	4 3 2 1	
	正确使用双动词结构来解释材料选择并汇报结果 正确使用比较级来比较第一个和改进的薄膜模型 **仅用于综合能力测试!	4 3 2 1	
语言控制得分:		____/28	
演示技巧	介绍全部小组成员的名字和组内分工角色	4 3 2 1	
	和听众保持视觉交流并用自然的面部表情和肢体语言表现自信	4 3 2 1	
	口头表达清楚自如	4 3 2 1	
	开头致敬结尾感谢	4 3 2 1	
	虚心看待评语并认真回答问题	4 3 2 1	
演示技巧得分:		____/20	

总分: ____/72

66-72 优 58-65 良 50-64 及格 0-49 不及格

综合能力测试（一）步骤： 表达能力（口头）

	老师做……	学生做……
1	组织老师和小组面谈, 给小组意见反馈	准备和练习对改进的薄膜模型的最后小组演示



小组成员	任务
中文督察员	介绍小组成员和角色 向大家展示改进的薄膜模型 介绍所用的材料有什么不同 汇报改进的薄膜模型要用这些材料的原因
材料管理员	回答并且汇报《工程设计步骤：制作！》（MMIC 13-1）的第一和第二个问题 强调第一个和第二个薄膜模型有什么相同和不同之处
记录员	回答并且汇报《工程设计步骤：制作！》（MMIC 13-1）的第三个问题 强调第一个和第二个薄膜模型有什么相同和不同之处
工作管理员	回答并且汇报《工程设计步骤：制作！》（MMIC 13-1）的第四个问题 强调第一个和第二个薄膜模型有什么相同和不同之处 感谢听众并邀请反馈意见
每个人	回答老师和同学们的提问

我们用咖啡过滤纸代替有小孔的铝箔纸。

有小孔的铝箔纸比海绵更适合。

如果/要是你们用咖啡过滤纸代替海绵，我觉得会有更多的水可以通过。

和老师一起做：

1. 看小组演示的录像。
2. 说一说哪些做得好？
3. 下一次演示的时候，你们会怎么改进？
4. 讨论一下你们做的练习：
 - 《小组意见反馈表》（MMIC 13-3）
 - 《数词、量词和体积》（MMIC 13-4）
 - 《小组工作自我评价》（MMIC 13-5）
5. 讨论一下由老师评定的《口语演示评分表》（MMIC 13-6/IPA 1-1）



口语演示/报告进行中

报告同学	听众们
1. 在白板上展示第一次的薄膜模型，并手持改进的薄膜模型，进行报告 2. 每位同学负责报告自己的部分	1. 认真听 2. 完成 《小组意见反馈表》 MMIC 13-4

全班讨论

口语演示/报告之后

报告同学	听众们
1. 完成《数词、量词和体积》 （MMIC 13-4）	

把第一次薄膜模型的照片放到这儿.....
(每个小组占一页)



工程师做些什么？



工程师有哪些性格特点？