

Lesson 9: Exploring Membranes, Part 1

(associated with EiE[®] Lesson 3, Part 1)

Lesson Topic: Exploring the properties of biological membranes

DESIRED RESULTS (教学目标)

Academic Content Objectives: Students can...

Chinese Language Arts

- Call attention to word relationships: synonyms and antonyms
- Listen for details to identify true/false statements

Science and Engineering

- 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

Learning Strategies: Students can...

- Work cooperatively with a group
- Observe and monitor during an experiment
- Write to learn: Journal notation

Chinese Language Objectives: Students can...

Functions and Forms

Content-obligatory (CO)

- 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

Content-compatible (CC)

- Express agreement and disagreement
- Use interjections
- Negotiate to reach consensus
- Give an example

Vocabulary

	了解 Recognize	识记 Produce
Content-obligatory	<p>Scientific Method 提问 ask questions, 假设 make hypothesis, 测试 test hypothesis, 分析 analyze results, 结论 draw conclusions, 汇报 report results Science Experiment Vocabulary 确认 confirmed, 推翻 disconfirmed</p>	<p>Basic Needs 基本需求 basic need, 空气 air, 水 water, 食物 food, 栖息地 shelter Living Creatures 小龙虾 crayfish, 蜣螂 Bess beetle, 人类 human, 青蛙 frog Body Parts 触须 antennae, 皮肤 skin, 嘴 mouth, 牙齿 teeth, 薄膜 membrane Functions 喝水 to drink water, 吃东西 to eat 栖息地 to find shelter, 吸 to breathe Properties of Membranes 特征 properties, 薄 thin, 厚 thick, 穿过/通 过 pass through, 阻挡 block, 保护 protect, 有洞 has holes, 有小孔 has small holes, 阻 挡灰尘 blocks dirt/keeps dirt out, 吸收 absorb Science Experiment Vocabulary 实验 experiment, 观察 observe, 科学家 scientist, 科学日志 science notebook/journal Objects Like/Not Like Membranes 咖啡过滤纸 coffee filter</p>

	了解 Recognize	识记 Produce
Content-compatible	<p>Compare/Contrast Words 比较 to compare and contrast</p> <p>Properties of Raisins 质地 texture: 鼓的 plump, 皱褶的 wrinkly, 糊状的 squishy, 细的 slimy</p> <p>Adverbs of Time 通宵 overnight</p> <p>Objects Like/Not Like Membranes 咖啡杯 coffee cup, 水坝 dam (man-made and human made), 食物容器 food container, 雨伞 umbrella, 蚊帐 mosquito net</p>	<p>Objects Like/Not Like Membranes 茶叶包 tea bag, 保鲜膜 plastic wrap, 塑料水瓶 plastic water bottle, 守门员 goalie, 足球网 soccer goal net, 青蛙的皮肤 frog skin, 雨林的华盖 rain forest canopy, 葡萄干 raisin</p> <p>Expressions of Emotion 真倒霉! Shoot! 算了! Forget it! 没戏了! I'm doomed!</p> <p>Synonyms/Antonyms 真/对 true, 假/错 false, 相同点 similarity, 不同点 difference</p> <p>Adjectives 相似的 similar, 不同的 different</p> <p>Properties of Raisins 形状 shape: 圆的 round 质地 texture: 湿的 wet, 干的 dry, 平滑的 smooth, 粗糙的 rough, 硬的 hard 颜色 color: 褐色的 brown, 浅褐色的 light brown, 深褐色的 dark brown, 紫色的 purple, 黑褐色的 black, 大小 size: 大的 big, 小的 small, 中等的 average/medium</p> <p>Compare/Contrast Words 通常 mostly, 所有 all, 但是 but, 只有 only, “有共同点” “in common”</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 for this lesson will depend on your students' proficiency levels. Because of this, we have not included all vocabulary here. Also, 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 Instruction**

- *Engineering is Elementary*[®] (EiE[®]) binder, Lesson 3, Part 1: Part 1: Materials, page 74
- Interactive whiteboard pages for Lesson 9: MMIC 9-IWB
- Basic needs posters from the four corners activity in Lesson 5
- Nametags for the membrane role-play activity, one per student: On 1/3 of the nametags, write 灰尘 (dirt), on 1/3 write 空气 (air), and on 1/3 write 水 (water)

Teacher Tip: Make laminated nametag necklaces to be re-used in future years

- Raisins, one raisin per student
- Digital camera for taking pictures of the raisin experiment
- Students' science notebooks
- Laminated job cards for group work
- Handouts:
 - a. MMIC 9-1: *True-False Listening Comprehension Charts*, one per student
 - b. MMIC 9-2 TG: *Bridge Map Analogies*
 - c. MMIC 9-3: *Membrane: Fill in the Blanks*, one per pair
 - d. MMIC 9-4: *The Scientific Method*, one per student
 - e. MMIC 9-5: *Describing Raisins*, one per student
 - f. MMIC 9-6 (EiE[®] {3-1}): *Exploring Membranes: Raisin Skin*, one per group

LEARNING ACTIVITIES (教学活动)**Preview Phase—“Intro” Activities**

The teacher will review the concepts of “basic needs” (Lesson 5) and “membrane” (Lesson 6). Next, students will play an interactive role-play game to highlight the properties of a membrane and then reconstruct the definition of a membrane with a fill-in-the-blank activity.

Time: Learning Activity 1—30 minutes

Learning Activity 2—45 minutes

Learning Activity 3—40 minutes

Learning Activity 1

1. In order to lead students in an activity to compare and contrast how the Bess beetle, crayfish, human, and frog meet their basic needs, draw students’ attention to the charts still posted in the classroom from the four corners activity from Lesson 5. Ask students:

中文	English
这些动物有什么共同点? (它们都需要空气、水、食物和栖息地)	What do all of these animals have in common? (They all need air, water, food and shelter to live.)

2. Display the following task on page 1 of MMIC 9-IWB on the whiteboard and have the whole class read the task aloud together:

中文	English
任务：说出这四种动物相同和不同的地方。选择一种基本需求，说一说它们是如何满足这个基本需求的。	Task: Identify similarities and differences among these four animals and the ways they meet one of their basic needs.

3. Create student groups (3 in each group). There will likely be 7 or 8 groups of three, meaning there will likely be two groups at each poster. This is fine, but student groups should be directed not to communicate with each other during this activity. Distribute the following job cards:

- **Terrific Taskmaster** (工作管理员): Makes sure group manages time/task well and leads group from step to step
- **Remarkable Recorder** (记录员): Writes out group responses
- **Chinese Champion** (中文督察员): Encourages use of Chinese only, assists group members with correct word/phrase as needed

4. Assign each group to one of the four basic needs. Ask each group to review the statements on their “basic needs” poster and **write one** compare or contrast type sentence about basic needs for **each member of the group to present to the class**. Let students know that **one** of their sentences should be **false** and the other two should be **true**. For example, below are the statements from the poster about the basic need of “water.”

中文	English
我用我的嘴来喝水；我将我的卵产在池塘或是河水里。 (小龙虾)	I use my mouth to drink and I lay eggs in water (pond/river). (Crayfish)
我用我的嘴来喝水；我用我的触角来寻找水源。 (蜣螂)	I use my mouth to drink and antenna to sense in the air where I can find water. (Bess beetle)
我用我的嘴来喝水。 (人类)	I use my mouth to drink. (Human)
我通常用皮肤来喝水，有时我也用我的大嘴巴来喝水。 (青蛙)	Mostly, I use my skin to drink and sometimes I use my big mouth. (Frog)

5. Referring to the “water” poster as an example, co-construct with the class an example of a compare or contrast statement, eliciting different words and phrases that can be used to compare and contrast in Chinese so that students will have the language that they need to complete the task.

中文	English
让我们一起来写一个正确(或者错误)的句子来比较一下这些动物是如何满足它们的基本需求的。我们要用什么样的字词和短语进行比较?	Let’s work together to write one true or false statement comparing or contrasting how these animals meet their basic need for water. What kinds of words and phrases can we use in Chinese to compare and contrast?

6. Record students’ ideas on the whiteboard and leave this language displayed during the group work for students to reference as needed. Consult the **Language Function-Form-Vocabulary Connections** charts that follow this learning activity for a variety of structures that could be used to identify similarities and differences and to compare and contrast in Chinese.

Note: Below are some example compare and contrast statements that students could write. Choose one example statement as a model for the task; do not display them all or this will limit the statements that the “water” group would be able to create during the activity.

中文	English
小龙虾、蜚螂、人类和青蛙几乎都用嘴巴来喝水。 (错误)	Crayfish, Bess beetles, humans and frogs mostly use their mouths to drink. (FALSE)
这些动物都需要水才能生存。 (对)	All of these animals need water to live. (True)
小龙虾和青蛙需要把卵下到水里，但是人类和蜚螂不需要。 (对)	Crayfish and frogs need water to lay their eggs, but humans and Bess beetles do not. (True)
只有蜚螂需要用触角寻找水源，但是小龙虾、青蛙和人类不需要。 (对)	Only Bess beetles use antennae to find water. Crayfish, frogs and humans do not. (True)
青蛙是两栖类，但是小龙虾、蜚螂和人类不是。 (对)	Frogs are amphibians but crayfish, Bess beetles and humans are not. (True)
青蛙的嘴巴比小龙虾和蜚螂的大。 (对)	Frog mouths are bigger than the mouths of crayfish and Bess beetles. (True)

- Allow student groups time to work. Once they have constructed their sentences, distribute MMIC 9-1: *True-False Listening Comprehension Charts*, one per student. Go over instructions.
- Have each group member orally present one sentence to the class, reading each sentence aloud **twice**. As each group presents their sentences, the rest of the class will listen and mark on MMIC 9-1: *True-False Listening Comprehension Charts* whether each statement is true or false. Once the group has finished presenting all of their sentences, invite the listeners to talk with their group members, identify the false statement and write why they think it is false. Review correct answers before continuing to the next animal poster.
- Continue until all groups have presented their sentences.

Language Function-Form-Vocabulary Connections (Activity 1)		
CO LP 9.1.1	State a contrast using contrastive clauses and adverbs of quantity or frequency	
For example:		
Adverbs of frequency		
总是, 从来不 always, never 通常, 经常 usually, often 有时 sometimes	常常, 不常常, 几乎不 frequently, infrequently, seldom 大多数, 通常地, 大部分 mostly, commonly, largely 有时 occasionally, on occasion 通常地, 持续地 constantly, continuously	极少地 rarely 正常地, 典型地, 一般地 normally, typically, generally 重复地, 常规地 repeatedly, regularly 间歇地 sporadically intermittently, spasmodically 习惯性地, 主要地 habitually, chiefly 主要地 predominantly
Adverbs of quantity		
只有 only	通常 mostly	都 all
Approaching	Attaining	Expanding
小龙虾、蜚螂和人类总是用它们的嘴巴喝水, 可是青蛙大多数用它们的皮肤。 Crayfish, Bess Beetles, and humans always use their mouths to drink water, but frogs mostly use their skin.	小龙虾、蜚螂和人类都用它们的嘴巴来喝水, 然而, 青蛙只用它们的皮肤。 Crayfish, Bess Beetles, and humans all use their mouths to drink water, however, frogs only use their skin.	小龙虾、蜚螂和人类都用它们的嘴巴来喝水, 相比而言, 青蛙主要用它们的皮肤。 Crayfish, Bess Beetles, and humans all use their mouths to drink water, in contrast, frogs predominantly use their skin.
Subj. + adv. of quantity + serial verb construction [Verb ₁ + Object ₁ + Verb ₂ + Object ₂], 可是 (conj. "but") + subj + adv. of frequency + verb + object.	Subj. + adv. of quantity + verb + object + purpose verb phrase [来 + Verb ₂ + Object ₂], 然而 (conj. "however"), + subj + adv. of frequency + verb + object.	Subj. + adv. of quantity + verb + object + purpose verb phrase [来 + Verb ₂ + Object ₂], four-character idiomatic expression, subj + adv. of frequency + verb + object.

Form focus: 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)

Noticing and awareness spotlight:**1. Use of four-character idiomatic expressions**

Four-character idiomatic expressions are commonly used phrases that carry a great of meaning beyond the four characters themselves. They have their origins in traditional Chinese stories, myths and historical facts and are best understood within these contexts. There are about 5,000 such expressions in use. A commonly used four-character idiomatic expressions found in the examples above is: 相比而言 (in contrast)

To pique student curiosity about these idiomatic expressions, teachers will need to research their origins and discuss the historical context with students.

2. Use of verb repetition with 得

Sometimes, the main verb is repeated if one wishes to give emphasis to the object of the main verb. In this case, the form is: Verb + Object + Verb + 得 + adv. as degree complement

我踢足球踢**得好**。(I kick *the soccer ball* well.) The verb needs to be repeated again after the SVO because “得 + adverb as degree complement” must follow the verb/adjective it describes.

CO LP 9.1.2	Make comparisons between two things using A + 比 (comparison marker) + B + adjective structure		
For example:			
	Approaching	Attaining	Expanding
	青蛙的嘴巴跟小龙虾的不一样。	青蛙的嘴巴比小龙虾的大。	青蛙的嘴巴比小龙虾的更大。
	The mouth of a frog and that of a crayfish are different.	Frog's mouth is bigger than crayfish's.	Frog's mouth is even bigger than crayfish's.
	A + 跟 (and) + B + 一样 (same) / 不一样 (different)	A + 比 + B + adj.	A + 比 + B + 更 + adj.
Form focus: A + 比 + B + Adj.			
"A" and "B" can be either nouns or noun phrases. 比 (comparison marker) is positioned between A and B with the adjective placed after B.			
Noticing and awareness spotlight: Use of 更 (even, even more)			
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.			

CO LP 9.1.3	State use/function of something using nominalization and purpose verb phrase, 来 + verb + object		
	Approaching	Attaining	Expanding
	小龙虾用它的钳子撕开食物。	蜣螂是用它们的触角来寻找水源的。	青蛙需要用它的皮肤来喝水。
	The crayfish uses pincers to tear food.	Bess beetles use their antennae to find water.	The frog needs to use its skin to drink water.
	Subj. + Verb ₁ + Object ₁ + Verb ₂ + Object ₂ [Verb ₁ and Verb ₂ are parallel verbs. They are both actions performed by the same Subj.]	Subj. + Verb 是 + nominalization (Verb ₁ 用 + Object ₁ + purpose verb phrase [来 + Verb ₂ + Object ₂] + 的).	Subj. + Verb ₁ 需要 + Verb ₂ 用 + Object ₁ + purpose verb phrase [来 + Verb ₃ + Object ₃]

Form focus
1. Multiple uses of 来
<ol style="list-style-type: none"> “来” as an action verb, meaning “to come”. e.g., 他昨天来过两次。(He came twice yesterday.) “来” is used to replace the verb in previous sentence. e.g., 把这杯茶喝完, 我们再来一瓶! (Drink up this cup of tea, we will drink another!) “来” is placed in front of a verb phrase, indicating purpose. e.g., Juan Daniel 需要水杯来喝水。(Juan Daniel needs a water bottle to drink water.) “来” is used to indicate the direction of an action verb. e.g., 你把那本书拿来! (Bring that book over here!)
2. Nominalization using 的
<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> <ul style="list-style-type: none"> 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. 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.

CC LP 9.1.4	Support ideas/opinions using compound sentences with adverb 因此	
For example:		
Approaching	Attaining	Expanding
<p>这是对/错误的, 因为生物都需要水生存。</p> <p>This is false/true, because living things all need water to live.</p>	<p>生物都需要水才能生存, 因此, 我们认为这句话是对/错误的。</p> <p>Living things all need water to live. As a result, we think this statement is true/false.</p>	<p>由于生物都需要水才能生存, 因此, 我们认为这句话是对/错误的。</p> <p>Due to living things all needing water to live, as a result, we think this statement is true/false.</p>
<p>....., 因为 (because).....</p> <p>因为 (because)....., 所以 (so).....</p>	<p>....., 因此 (as a result, therefore),</p>	<p>由于 (due to)....., 因此 (as a result, therefore),</p>

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. 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 (huì) 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>

Learning Activity 2

1. Ask students to stop and think: What is the new word the class has been using for frog skin? (薄膜 [membrane])
2. Give students a few seconds to independently recall the word and then ask them to whisper the word to their neighbor. On the whiteboard, write the character for “薄膜 (membrane).”
3. Ask the class to recall the two examples of objects that are **like** membranes that they looked at during Lesson 6. Call on students to name them while recording the words on the whiteboard (咖啡过滤纸 [coffee filter], 茶叶袋 [tea bag]).

Note: Recall that two objects were **not** like membranes: 塑料保鲜膜 (plastic wrap), 塑料水瓶 (plastic water bottle).

4. Construct with students two (or more) bridge map analogies. Some examples are listed on MMIC 9-2 TG: *Bridge Map Analogies*.
5. Display page 2 of MMIC 9-IWB, a picture of a coffee filter as an example of something that is **like** a membrane, and a picture of a frog’s skin as an example of a “real” membrane. Recycle key vocabulary about membrane properties that will help students to re-construct the definition of membrane in the Activity 3. Ask the following questions to guide student examination of membrane properties:

中文	English
为什么咖啡过滤纸像薄膜一样，而青蛙的皮肤是一个真真正正的薄膜？ (咖啡过滤纸是人造的；青蛙的皮肤是天然的。)	Why is a coffee filter “like” a membrane whereas frog’s skin is a “real” membrane? (A coffee filter is human-made but frog skin is natural.)
薄膜是厚的还是薄的？ (把学生所说的答案“薄”写在白板上。)	Is a membrane thick or thin? (Write the character for “thin” on the whiteboard as students say it.)
薄膜是否可以让一些东西通过？什么样的东西可以通过？(比如，水/空气) (画出一个薄膜让水通过的样子，并把“让……通过”和“通过”写在旁边。)	Can a membrane allow anything to pass through? What types of things can pass through it? (e.g., water/air) (Draw some water passing through, and write the characters for “allow through” and “pass through” next to it.)
薄膜是否可以阻挡一些东西经过？什么样的东西可以被挡住？(比如，咖啡过滤纸上的残渣、茶叶袋里的茶叶和青蛙皮肤上的灰尘)	Does a membrane block anything from passing through? What types of things can a membrane block? (e.g., coffee grounds for the filter or tea leaves for the tea bag; dirt for the frog skin)

(写出“阻挡”和“不能通过”，并演示薄膜是怎样阻挡咖啡残渣和茶叶的。)	(Write the characters for “block” and “not pass through” next to it, showing how it blocks coffee or tea from passing through.)
为什么薄膜要阻挡一些东西通过? (对青蛙来说: 它要保护自己)	Why does a membrane block some things? (For the frog: To protect it)
(把“保护”写在你画的图的旁边。对咖啡过滤纸和茶叶袋来说: 挡住残渣和茶叶是因为它们不好喝。)	(Write the character for “protect” next to the illustration. For the coffee filter or tea bag: To block the coffee grounds or tea leaves from going through because they do not taste good.)

6. Next, involve the whole class in an activity where students will “act” like a membrane. For example, membranes are thin and have holes that are too small to see. Invite three groups of four students to “be” like membranes, as follows:
- Invite four students to the front and ask the students to stand in a line and “be thin”, like membranes (stand close to each other, shoulder to shoulder, all facing the class). Ask:

Speaker	中文	English
Teacher	你们像薄膜一样吗?	Are you like a membrane?
Group 1	对! 我们像薄膜一样。	Yes, we are like a membrane.
Teacher	为什么?	Why?
Group 1	我们像薄膜一样, 因为我们很薄。	We are like a membrane because we are thin.

- Next, invite four more students to the front and ask the students to stand in a line and “be thick” (stand front to back with their hands on the shoulders of the person in front of them, all facing in one direction). Ask:

Speaker	中文	English
Teacher	你们像薄膜一样吗?	Are you like a membrane?
Group 2	不对! 我们不像薄膜。	No, we are not like a membrane.
Teacher	为什么?	Why not?
Group 2	我们不像薄膜, 因为我们很厚。	We are not like a membrane because we are thick.

- Ask Group #1 the same questions again so that they can practice and repeat the interaction.
- Invite four more students to the front and ask the students to stand in a line. This group will represent the property “membranes have tiny holes that are too small to see.” Have

the group form a thin line by standing shoulder to shoulder and putting their arms around each other to form a close-knit group with “no visible holes.” Ask:

Speaker	中文	English
Teacher	你们像薄膜一样吗?	Are you like a membrane?
Group 3	对! 我们像薄膜一样。	Yes, we are like a membrane.
Teacher	为什么?	Why?
Group 3	我们像薄膜, 因为我们有用眼睛看不见的小洞。	We are like a membrane because we have holes that are too small to see.

- e. Repeat the question/answer interactions with Groups 1 and 2. All three groups should remain standing.
- f. In the next part of this activity, the rest of the students in the class will role-play three different elements--灰尘 (dirt), 空气 (air) and 水 (water)--as they try to pass through the three membrane lines. First, model the role-play activity for the class, with teacher playing the role of “dirt.” Put on a nametag with the word 灰尘 (dirt). Then walk up to each membrane line, introduce yourself (“I am dirt”), and ask if you can pass through. Invite a student from the group to respond. If they are not sure how to respond, ask the class to help formulate a response. Model interactions as “dirt” with all three groups, as follows:

Speaker	中文	English
Dirt (to Group 1)	嗨! 我是灰尘, 我可以从这里通过吗?	Hi! I am dirt. Can I pass through?
Group 1 (thin)	不行。	No.
Dirt	为什么?	Why not?
Group 1 (thin)	虽然我们很薄, 但是我们可以阻挡灰尘通过。	Although we are thin, still we block dirt from passing through.
Dirt (to Group 1)	真倒霉!	Shoot!

Speaker	中文	English
Dirt (to Group 2)	嗨! 我是灰尘, 我可以从这里通过吗?	Hi! I am dirt. Can I pass through?
Group 2 (thick)	不行, 我们很厚而且没有洞。任何东西都不能通过我们。	No, we are thick and have no holes. Nothing can pass though.
Dirt (to Group 2)	真倒霉!	Shoot!

Speaker	中文	English
Dirt (to Group 3)	嗨! 我是灰尘, 我可以从这里通过吗?	Hi! I am dirt. Can I pass through?
Group 3 (holes too small to see)	不行。虽然我们有小孔, 这些小孔小得眼睛看不见, 但是我们可以阻挡灰尘通过。	No. Although we have holes, they are too small to see, still we block dirt from passing through.
Dirt	真倒霉! 算了! 没戏了!	Shoot! Forget it! I'm doomed!

- g. After modeling with all three groups as “dirt,” invite one student from the class to model interactions with the three membrane groups as “water” and another student to model interactions with the three membrane groups as “air”. Work with the rest of the class to scaffold the interactions as necessary. Refer to the following interaction model to help students model the interactions. Because the students will have heard and practiced the interaction multiple times, try to have the students do the role-play activity without these interaction frames displayed page 3-5 of MMIC 9-IWB on the whiteboard:

Speaker	中文	English
Water/ Air	嗨! 我是水/ 空气, 我可以从这里通过吗?	Hi, I am water/air. Can water/air pass through?
Group 1 (thin)	可以!	Yes.
Water/ Air	为什么?	Why?
Group 1 (thin)	我们很薄。我们让水/ 空气通过。	We are thin. We allow water/air to pass through.
Water/ Air response to Group 1	谢谢! (学生们通过这一组, 换到其他小组。)	Thank you! (The student now passes through the line and moves on to another group.)

Speaker	中文	English
Water/ Air	嗨! 我是水/ 空气, 我可以从这里通过吗?	Hi, I am water/air. Can water/air pass through?
Group 2 (thick)	不行。 为什么?	No. Why not?

	我们很厚而且没有洞，所以任何东西都不可以通过我们。	We are thick and have no holes, so nothing can pass through.
Water/ Air response to Group 2	真倒霉! 算了! 没戏了!	Shoot! Forget it! I'm doomed!

Speaker	中文	English
Water/ Air	嗨! 我是水/ 空气, 我可以从这里通过吗?	Hi, I am water/air. Can water/air pass through?
Group 3 (holes too small to see)	可以 为什么? 虽然我们有眼睛看不见的小孔, 可是我们让水/ 空气通过。	Yes. Why? Although we have holes that are too small to see, still we allow water/air to pass through.
Water/ Air response to Group 3	谢谢! (学生们通过这一组, 换到其他小组。)	Thank you! (The student now passes through the line and moves on to another group.)

- h. Pass out nametags to students who are not part of Groups 1-3: $\frac{1}{3}$ of the nametags will have the word "dirt" on them, $\frac{1}{3}$ of the nametags will have the word "water" on them, and $\frac{1}{3}$ of the nametags will have the word "air" on them.
 - i. Ask Groups 1-3 (the three membrane lines) to spread themselves around the room. Tell the students with the nametags to individually go to each membrane line, greet the group, and do the role-play as it was just modeled.
7. After the students have finished playing the game, ask students to return to their four groups and tell each other one thing they learned about membranes from the role-play activity.
 8. Call on select students to share their groups' statements.

Language Function-Form-Vocabulary Connections (Activity 2)		
CO LP 9.2.1	State or identify what/who something is like/is not like using a stative verb 像.....一样 construction	
For example:		
Approaching	Attaining	Expanding
这(不) 是薄膜。	我们像薄膜一样。 我们不像薄膜。	这个咖啡滤纸的功能跟薄膜很相似。
This is/is not a membrane.	We are like a membrane. We are not like a membrane.	This coffee filter's function is very similar to that of a membrane.
Pronoun (这) + predicate [Verb 是 + noun].	Pronoun + stative verb (像) + noun + adv. (一样 exactly). Pronoun + negative particle + stative verb (像) + noun.	Noun phrase (Pronoun (这) + CL + noun + 的 showing possession+ noun) + preposition phrase (preposition 跟+ object) + adv. + verb (相似).
Form focus		
1. Stative verbs		
Stative verbs are used to describe situations that do not involve action. Examples include 喜欢 'to like,' 爱 'to love,' 像 'to resemble,' 想 'to want,' 要 'to want,' 需要 'to need,' 怕 'to fear,' 尊敬 'to respect,' 感谢 'to appreciate,' 懂 'to understand,' 信 'to believe,' and 想念 'to miss.'		
这个人像工程师。 (This object resembles a membrane.)		
Stative verbs can be modified by adverbs of degree. The adverb will be placed directly in front of the stative verb. For example, 这个物品很像飞机。 (This object looks a lot like an airplane.)		
2. Use of preposition 跟		
The preposition/coverb 跟 has several different uses. A useful sentence structure that uses this preposition is as follows: Subj./topic + preposition phrase (preposition 跟+ object) + verb + (noun phrase).		
我想跟她/他做葡萄干实验。 I want to do the raisin experiment with her/him.		
Juan Daniel 和他的朋友们跟镇上的其他男孩子们比赛踢球。 Juan Daniel and his friends play soccer with the other boys in town.		

Noticing and awareness spotlight	
1. Use of negation adverb 不 (bú) with stative verbs	
不 (bú) is an adverb that means “not.” Like most adverbs, 不 (bú) always appears before the verb, in this case, 像, a stative verb.	
For example, 这个人不像工程师。 (This person does not seem like an engineer.)	
2. Use of “像……一样” and 不像……	
To describe similarities, use “像……一样” structure	
To describe A is not like B, use 不像……; “一样” is no longer used.	

CO LP 9.2.2	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?			
A few particles are commonly used at the end of questions. 吧? is used to invite agreement. 呢? is a tag question meaning “, and you?” 吗? is a question particle that is used when one expects a “yes” or “no” response.			

CO LP 9.2.3	Describe attributes of person/place/thing using modifying phrases		
For example: 眼睛看不见的小洞 (tiny holes that eyes cannot see) 薄薄的、阻挡灰尘的薄膜 (membrane that is thin and blocks dirt)			
Approaching	Attaining	Expanding	
厚(厚)的 (thick) 薄(薄)的 (thin) 天然的 (nature-made) 人造的 (human-made)	有小孔的 (that has tiny holes) 没孔的 (that does not have holes)	吸收水分的 (that absorbs water) 眼睛看不见的 (that eyes cannot see)	
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 LP 9.2.4	Support ideas/opinions using compound sentences with adverb 因此		
For example:			
Approaching	Attaining	Expanding	
任何东西都不可以通过我们，因为我们很厚而且没有洞。	我们很厚而且没有洞，因此，任何东西都不可以通过我们。	由于我们很厚而且没有洞，因此，任何东西都不能通过我们。	

Nothing can pass through, because we are thick and have no holes.	We are thick and have no holes, as a result, nothing can pass through.	Due to the fact that we are thick and have no holes, as a result, nothing can pass through.
....., 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 LP 9.2.5	State a contrary outcome using compound sentences with adverbial connectors 虽然/尽管 (although/even though), 但是/可是 (but/still)	
For example:		
Approaching	Attaining	Expanding
我们很厚而且没有孔, 所以没有东西可以通过我们。 We are thick and have no holes, so nothing can pass through us.	虽然/尽管我们有眼睛看不见的小孔, 但是/可是我们可以阻挡灰尘通过。 Although we have holes that are too small to see, still we block dirt from passing through.	尽管/虽说/虽然我们有小孔, 但是我们可以阻挡灰尘通过。 Even if/although we have holes that are too small to see, we can still block dirt from passing through.
....., 所以 (so).....	虽然 (Although)....., 但是 (but/still).....	Even if... , we can still.....
Form focus: 虽然/尽管 (Although)....., 但是/可是 (but/still).....		
To state a contrary outcome, you begin by introducing the situation or expectation in the first clause, e.g., 虽然我们有眼睛看不见的小洞, (Although we have holes that are too small to see, ...). This initial clause will be followed by the contrary, or unexpected outcome clause, e.g.,但是我们可以阻挡灰尘通过。 (...still we block dirt from passing through.).		
Connecting adverbs for the first situation clause: even if, though, although [即使 (even if), 虽然 (although), 尽管 (in spite of)]		
Connecting adverbs for the following contrary outcome clause: 可是, 但是, 也 (but, still)		

Noticing and awareness spotlight:
1. Placement of [即使 (even if), 虽然 (although), 尽管 (in spite of)]
The connecting adverbs, [即使 (even if), 虽然 (although), 尽管 (in spite of)], can be placed either at the beginning of the sentence or after the subject or topic.
2. Simple subject + predicate sentence structure
When an adjective is used as a predicate, the verb 是 should be omitted.

CC LP 9.2.6	Use interjections	
For example:		
Approaching	Attaining	Expanding
不好! No good!	真倒霉! Shoot!	无可救药! Hopeless!
可惜! Pity!	算了! Forget it!	我死定了! I'm doomed!
	没戏了! I'm doomed!	

Learning Activity 3

1. Leading students in an activity to reconstruct the definition of “membrane,” display the “coffee filter/ tea bag + frog skin” page 6 of MMIC 9-IWB to provide visual support as students work on the definition activity.

Note: Check MMIC 9-3 to make sure the definition exactly matches the definition students came up with during Lesson 6. If it is not an exact match, be sure to revise so that students can use **their** definition. MMIC 9-3 may be used solely as a template.

2. Ask students to find a partner. Distribute MMIC 9-3: *Membrane: Fill in the Blanks*, one per pair. On the handout, there is the one-sentence definition of “membrane” that the class created in Lesson 6, but some words have been left out of the definition. The missing words are listed on the handout. Instruct students to choose the words from the list that complete the one-sentence definition. Once completed, ask them to practice reading the definition aloud with their partner.
3. Next, ask each pair to pair up with another pair (to form a group of four), read their definition to the other pair, and see if all agree on the missing words.
4. Ask a group to share their sentence definition with the whole class. Then display the definition of “membrane” on the whiteboard and invite the whole class to read it together. Be sure to discuss that membranes help frogs, humans, and other living things meet their basic needs.
5. Ask:

中文	English
你怎么知道薄膜的典型的特性是阻挡某些东西而让另外一些东西通过? 科学家是怎样证明他们的结论的? (答案:做实验!)	How can you know for sure that a defining property of a membrane is that it allows some things to pass through and blocks other things? What do scientists do when they want to prove that something they think is true really is true? Answer: (They do an experiment!)

6. Tell students that they will begin an experiment that they will continue tomorrow using raisins, which, like frogs, have natural membranes.
7. Pass out one real raisin to each student.
8. Display page 7-9 of MMIC 9-IWB: *Describing Raisins*, and pass out handout MMIC 9-5: *Describing Raisins*. On both the whiteboard page and the handout, underneath the raisin, the following categories 质地 (texture), 颜色 (color), 大小 (size) are listed.
9. Using the three descriptive categories, have the class work together to brainstorm vocabulary to create a word bank for each category. Ask students to write the words on their own handouts as well. Call attention to synonyms and antonyms as words are

suggested (e.g., rough/smooth). Display the word banks on the whiteboard for students to use as they are completing the raisin skin experiment. Be sure to elicit the words below during the vocabulary brainstorming, if students do not suggest them on their own. Use visual support to illustrate their meaning, if necessary:

中文	English
质地 鼓的、圆的、湿的、皱褶的、干的、糊状的、细的、平滑的、粗糙的、硬的	Texture plump, round, wet, wrinkly, dry, squishy, slimy, smooth, rough, hard
颜色 褐色的、浅褐色的、深褐色的、紫色的、黑褐色的	Color brown, light brown, dark brown, purple, black
大小 大的、小的、中等的、大一点儿的、小一点儿的	Size big, small, average/medium, bigger/smaller

10. Next, ask students the following questions:

中文	English
葡萄干的哪一个部分是薄膜? (表皮)	What part of a raisin might be a membrane? <i>(The skin.)</i>
关于薄膜, 我们已经学习到了什么? (薄膜很薄, 让一些东西通过, 等等。)	What have we learned about membranes? <i>(They are thin, and allow some things to pass through, etc.)</i>
如果葡萄干的表皮像青蛙的皮肤一样是一个薄膜, 我们怎么通过实验来证明呢? (让学生提出一些方法[注意: 要用有关特性的关键词]。如果没有学生建议, 引导学生实验葡萄干是否让谁通过。)	If raisin skin is a membrane like frog skin is, how might we test this in an experiment? <i>(Allow student to propose ways to test raisin skin [using key vocabulary words related to properties]. If no student suggests it, guide students to testing whether or not raisin skin will allow water to pass through it.)</i>

11. Tell students that they will test this by soaking their raisins in water overnight.

12. Display page 10 of MMIC 9-IWB: *The Scientific Method* and distribute to each student one copy of MMIC 9-4: *The Scientific Method*. Review the first step: 提出假设 (Make hypothesis), ensuring that students remember what a hypothesis is.
13. In their science notebooks, ask students to write a **hypothesis** about what will happen to raisins when they soak overnight in water.
14. Allow students to share their hypotheses with the class.
15. Follow Step #5 of Lesson 3 Preparation on page 75.





Teacher Tip: *Be sure to take photos of students while they are examining their raisins and writing hypotheses in their journals. These photos will be used in Activity 4.*

Note: *To prepare for Focused Learning Phase—“Through” Activities, read pages 73-75 in the EiE® binder. Disregard numbers 7 and 8 on page 76. Before beginning the next activities, you will need to prepare materials for the raisin experiment. One step needs to be completed 24 hours before Learning Activity 4 begins; another step needs to be completed 3 hours before.*

Language Function-Form-Vocabulary Connections (Activity 3)	
CO LP 9.3.1	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> <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.</p> <p>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.”</p>	
3. compound	
<p>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.</p> <p>A few compound types:</p> <p><i>Verb-Object:</i> 踢足球 (to kick soccer ball)、开球 (to kick off)、发誓 (to pledge)</p> <p><i>Verb-Complement:</i> 摔倒 (to fall down)、改进 (to improve and get better)、进来 (to come in)</p> <p><i>Subject-Predicate:</i> 天亮 (bright [sky is bright])</p> <p><i>Number-Classifier:</i> 各种 (various kinds)、一道 (a ray of...)、一片 (a patch of...)</p>	

<p>Adverb-Verb: 慢跑 (to jog [to run slowly])、快走 (to hurry [to walk fast])</p> <p>Verb-Verb-Noun: 栖息地 (habitat [to stay and rest at a place])</p> <p>Adjective-Adjective-Noun: 浅桃色 (light peach color)、吉祥物 (mascot [happy and auspicious object])</p>
4. word
<p>A word is written with one or more Chinese characters. A word can consist of a single character (脚, foot), a compound (幸运, lucky), a duplicate (招招手, to wave), or an affixed form (第一, first, 第二, second, etc.).</p>

CO LP 9.3.2	Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines	
<p>For example:</p> <p>Left-right: 叫、场</p> <p>Top-bottom: 吉、只</p> <p>Left, middle, right: 树、谁</p> <p>Top, middle, bottom: 复、常</p> <p>One-part, totally enclosed: 国、回</p> <p>Partially enclosed: 用、原</p>		
Approaching	Attaining	Expanding
<p>One- and two-part characters</p> <p>One-part character 我、生</p> <p>One-part, totally enclosed 国、回</p> <p>Two-part characters Left-right: 叫、场 Top-bottom: 吉、只</p>	<p>Three-part characters</p> <p>Left, middle, right: 树、谁</p> <p>Top, middle, bottom: 复、常</p> <p>Left, top-right, bottom-right: 锋、纷</p> <p>Top-left, bottom-left, right: 部、剂、劲</p> <p>Left-top, right-top, bottom: 然、赞</p> <p>Top, left-bottom, right-top: 死、前</p>	<p>Four + part characters</p> <p>Left-top, right-top, left-bottom, right bottom: 能、舒</p> <p>Left, top-right, middle-right, bottom-right: 慢、镜</p> <p>Left, middle, top-right, bottom-right: 游</p> <p>Left, middle-top, middle-bottom, right: 湖</p>
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>		

For example, Two-part structures:  (top/bottom),  (left/right) Three-part structures:  (left, top-right, bottom-right),  (top-left, bottom-left, right), etc.
2. Stroke order guidelines
General rules for writing Chinese characters are: <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 LP 9.3.3	Describe attributes of person/place/thing using modifying phrases	
For example: 眼睛看不见的小洞 (tiny holes that eyes cannot see) 薄薄的、吸收水分的葡萄干 (raisins that are thin and absorbs water)		
Approaching	Attaining	Expanding
圆的 round, 湿的 wet, 干的 dry 平滑的 smooth, 粗糙的 rough 硬的 hard 褐色的 brown, 浅褐色的 light brown, 深褐色的 dark brown, 紫色的 purple, 黑褐色的 black, 大的 big, 小的 small, 中等的 average/medium	有小孔的 (that has tiny holes) 没孔的 (that does not have holes)	吸收水分的 (that absorbs water) 眼睛看不见的 (that eyes cannot see)
Attributive adjective [adj. + 的] + Head noun	Relative clause [(没)有 + noun + 的] + Head noun	Relative clause [verb + noun + 的] + Head noun
Form focus		
1. Simple descriptive sentence (Subj. + 是 + adj. + 的)		
Modifying phrases can be either attributive adjectives, e.g., 圆的 (round) 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).		

2. Relative clause [verb + noun + 的] + Head noun
The “是 + adj. +的” structure is commonly used to describe something or someone. For example, 这个葡萄干是圆的。(This raisin is round.)
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 LP 9.3.4	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
薄膜阻挡有害的东西在外面, 例如灰尘。 Membranes block/stop harmful things outside, for example, dirt.	薄膜把有害的东西挡在外面, 例如灰尘。 Membranes protect by keeping harmful things out, for example, dirt.	薄膜让别的东西经过, 像空气或者水。 Membranes let some things pass through, such as air and water.
Subj. + Verb + Object + Complement (adv.), for example, ...	Subj. + 把-construction [把 + object + verb + adv. phrase [得 (adv. marker) + adv.]], for example, ...	Subj. + 让/使-construction [让/使 + direct object + verb], such as, ...
Form focus		
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. 我们把这个想法放/写在这个部分。(Subj +把 + direct object noun phrase + verb + locative complement.) We wrote/put our ideas in this section. 		

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.

CO LP 9.3.5	Predict cause-effect relationship using hypothetical conditional sentence structure with 如果/要是……, (那么)…… and the adjectival verb 可能		
For example:			
	Approaching	Attaining	Expanding
葡萄干是有可能变大。 The raisin is likely to get bigger.	如果/要是葡萄干在水里过夜, 那么它可能会吸收水分而变大。 If a raisin stays in water overnight, then it may absorb some water and get bigger.	如果/要是葡萄干在水里过夜, 那么它的表皮会变得光滑, 因为它让水通过。 If a raisin stays in water overnight, then its skin may become smooth, because it can let water pass through.	
可能 (maybe, perhaps)	要是/如果 (if) …… , 那么 (then) …… 可能 (perhaps)……	要是/如果 (if) …… , 那么 (then)……(可能 (perhaps)……, 因为……	
Form focus: 要是/如果……, ……(可能)……			
The hypothetical conditional sentence structure consists of two parts: <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			
能 and 会 are both auxiliary verbs meaning “can” or “may.” They are used interchangeably. However, there is a difference between them: 会 (huì) specifies a learned, acquired skill or a mental ability; 能 (néng) means having the physical ability or opportunity to do something unless a condition prevents it.			
For example: 我会游泳, 可是我今天不能游泳, 因为我的腿受伤了。 I can swim, but I cannot today, because my leg is injured.			

CC LP 9.3.6	Express agreement/disagreement		
For example:			
	Approaching	Attaining	Expanding
好。 Good.	你说得对。 You are correct.	我的想法跟你的一样。 I share your thoughts.	
我同意。 I agree.	你完全正确。 You're absolutely right.	我赞成。 I agree (more formal).	
我也是/同意。 I also + verb (am/agree).	我也是这么认为的。 I think so too.	我完全赞同。 I agree with you entirely.	
对。 Exactly/Correct.	我也不这么认为。 I don't think so either.		
不。 No.	我不是这么认为的。 I don't think so.	我的意见跟你的不同。 My suggestions are different from yours.	
不好。 Not good.	是, 可是你不觉得.....? Yes, but don't you think...	我想和你讨论讨论..... I must take issue with you on that.	
不同意。 I don't agree with you.	我觉得我不同意。 I'm afraid I have to disagree.	然而 However	
不对。 Not exactly.			
Noticing and awareness spotlight: Repetition of verb			
Repetition of a verb, e.g., 讨论讨论 (to discuss), can be used to soften the tone of voice.			

CC LP 9.3.7	Give an example		
	Approaching	Attaining	Expanding
薄膜阻挡有害的东西在外面, 例如灰尘。	薄膜把有害的东西挡在外面, 例如/像灰尘。	薄膜让别的东西经过, 举个例子空气和水。	
Membranes block/stop harmful things outside, for example, dirt.	Membranes protect by keeping harmful things out, for example, dirt.	Membranes let some things pass through, such as air and water.	

Subj. + Verb + Object + Complement (adv.), for example, ...	Subj. + 把-construction [把 + object + verb + adv. phrase [得 (adv. marker) + adv.]], for example, ...	Subj. + 让/使-construction [让/使 + direct object + verb], such as, ...
Noticing and awareness spotlight: Words/phrases used to give an example		
<p>There are different phrases used to give an example. These phrases are usually set off with a comma.</p> <p>例如/譬如 (for example, for instance) 像 (like, such as) 举个例子来说 (to illustrate this) 换句话说 (in other words, to put it another way) 就是说 (that is to say) 好像 似的 (just as/like... [used as simile])</p>		

Focused Learning Phase--“Through” activities

The teacher will lead students in an experiment in which students will explore first-hand the properties of membranes by studying what happens to raisin skin under different conditions.

Time: Learning Activity 4—60 minutes

Note: Read pages 73-75 in the *EiE*[®] binder before beginning this lesson. Disregard numbers 7 and 8 on page 76. Before beginning this lesson, you will need to prepare materials for the raisin experiment activities. One step needs to be completed 24 hours before Learning Activity 4 begins; another step needs to be completed 3 hours before. Chart paper (see part 1 materials, page 74) should be labeled “What Have we Learned about Membranes?”

For Learning Activity 4, follow the instructions in the *EiE*[®] binder for *EiE*[®] Lesson 3, Part 1, on pages 79-82. *EiE*[®] Lesson 3, Part 2 will be done in Lesson 10 of this unit.

Learning Activity 4

1. Tell students that they will now become scientists, checking to see if their hypotheses from yesterday can be 确认 (confirmed) or 推翻 (disconfirmed).
2. Display page 10 of MMIC 9-IWB: *The Scientific Method* and review with students what the first and second steps are (make hypothesis and test hypothesis).
3. Ask students to turn to a partner and share yesterday’s hypotheses about what might happen when raisins are soaked in water.
4. Put students into groups of four and distribute a job card to each student:
 - **Magnificent Materials Manager** (材料管理员): Picks up and distributes handouts and materials to group
 - **Terrific Taskmaster** (工作管理员): Makes sure group manages time/task well and leads group from step to step
 - **Remarkable Recorder** (记录员): Writes group responses on handout
 - **Chinese Champion** (中文督察员) & **Polished Presenter** (演示质检员): Encourages use of Chinese only, assists group members with correct word/phrase as needed, and reports group’s work to class.
5. Distribute MMIC 9-6 (*EiE*[®] {3-1}): *Exploring Membranes: Raisin Skin*, one per group. All groups will study all four raisin types during this activity.
6. Follow the lesson plan for Lesson 3, Part 1 in the *EiE*[®] binder, pages 79-82, *but make the following changes:*
 - Do not do Step #1 on page 79. Begin with Step #2.
 - *Be sure to connect steps of the Scientific Method to the raisin experiment by taking photos as students proceed. Necessary photos include photos of students examining raisins, students completing MMIC 9-3, students co-constructing and sharing compare-contrast sentences, a photo of the “What Have we Learned” chart, and*

students recording conclusions in their journals. In Lesson 10, these photos will be used to review the steps of the Scientific Method in this experiment.

- As the class moves through Steps 7, 10, 11, and 12, students should copy the statements about membranes into their own science notebooks.
7. When groups have completed MMIC 9-6 (EiE[®] {3-1}): *Exploring Membranes: Raisin Skin* for all four raisins, have the groups do comparisons of the properties of the four raisins using comparative and superlative adjectives. Begin by eliciting comparative and superlative structures from students, scaffolding their responses to lead them to the sentence frames that are listed below. Then display these sentence frames on the whiteboard:

中文	English
葡萄干(#)比葡萄干(#)更_____。	Raisin (#) is -er than raisin (#)
葡萄干(#)比葡萄干(#)更_____。	Raisin (#) is more ___ than raisin (#)
葡萄干(#)最_____。	Raisin (#) is the -est
葡萄干(#)最_____。	Raisin (#) is the most ____

8. Assign each group to do a specific comparison, as specified below. Display these assignments on page 11 of MMIC 9-IWB:

中文	English
第一组: 比较 1 号葡萄干和 4 号葡萄干 (质地、大小和颜色)	Group 1: Compare raisins 1 and 4 (texture, size and color)
第二组: 比较 1 号葡萄干和 2 号葡萄干 (质地、大小和颜色)	Group 2: Compare raisins 1 and 2 (texture, size and color)
第三组: 比较 1 号葡萄干和 3 号葡萄干 (质地、大小和颜色)	Group 3: Compare raisins 1 and 3 (texture, size and color)
第四组: 比较四个葡萄干的质地	Group 4: Compare all 4 raisins for texture
第五组: 比较四个葡萄干的大小	Group 5: Compare all 4 raisins for size
第六组: 比较四个葡萄干的颜色	Group 6: Compare all 4 raisins for color

9. Ask students to co-construct a few comparative and superlative sentences using the structures and vocabulary already introduced and to prepare to share these statements with the class.
10. Invite groups' **Polished Presenters** to orally report their findings to the class.

Note: Do not do "Part 1: Reflection" from the EiE lesson (page 83) yet. Students need to have read Juan Daniel, Chapter 6 before doing this activity.

Expansion Phase--“Beyond” activities

Students will record their observations from the raisin experiment in their science notebooks. Teacher will extend the activity by comparing what happens to human skin when it is in water to what happens to raisin skin in water.

Time: Learning Activity 5--20 minutes

Learning Activity 5

1. Give students some time to copy the membrane definition in their science notebooks, record observations in their science notebooks after they have worked through the experiment, and compare and contrast what happened to the different raisins (see “Teacher Tip #1”, page 77 in the EiE® binder).
2. To extend further, discuss with students what happens to their fingers when they are in the bath too long (they get “皱巴巴的(wrinkly)”). Show a “before” and “after” finger picture to illustrate. Ask students why the finger changes in water. (Answer: Because skin is a membrane and it changes when it is in water.)

Teacher Tip: *In a Google image search, type “pruney fingers.”*

3. Ask students to talk with a partner and compare what happens to the texture of raisin skin when it is in water and human skin when it is in water. (Answer: Raisin skin gets smooth in water but is wrinkly when dry; human skin is smooth when dry but gets wrinkly in water because human skin has many different layers. The longer a raisin is in water, the “-er” it becomes. The longer human fingers are in water, the “-er” they become.)
4. Close the lesson by having selected students report the results of their conversations.

Language Function-Form-Vocabulary Connections (Activity 4-5)		
CO LP 9.4-5.1	Predict cause-effect relationship using hypothetical conditional sentence structure with 如果/要是……, (那么)…… and the adjectival verb 可能	
For example:		
Approaching	Attaining	Expanding
葡萄干是有可能变大。 The raisin is likely to get bigger.	如果/要是葡萄干在水里过夜, 那么它可能会吸收水分而变大。 If a raisin stays in water overnight, then it may absorb some water and get bigger.	如果/要是葡萄干在水里过夜, 那么它的表皮会变得光滑, 因为它让水通过。 If a raisin stays in water overnight, then its skin may become smooth, because it can let water pass through.
可能 (maybe, perhaps)	要是/如果 (if) …… , 那么 (then) …… 可能 (perhaps)……	要是/如果 (if) …… , 那么 (then)……(可能 (perhaps)……, 因为……
Form focus: 要是/如果……, ……(可能)……		
The hypothetical conditional sentence structure consists of two parts: <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		
能 and 会 are both auxiliary verbs meaning “can” or “may.” They are used interchangeably. However, there is a difference between them: 会 (huì) specifies a learned, acquired skill or a mental ability; 能 (néng) means having the physical ability or opportunity to do something unless a condition prevents it. For example: 我会游泳, 可是我今天不能游泳, 因为我的腿受伤了。 I can swim, but I cannot today, because my leg is injured.		

CO LP 9.4-5.2	Describe attributes of person/place/thing using modifying phrases		
For example: 眼睛看不见的小洞 (tiny holes that eyes cannot see) 薄薄的、吸收水分的葡萄干 (raisin that is thin and absorbs water)			
Approaching	Attaining	Expanding	
圆的 round, 湿的 wet, 干的 dry 平滑的 smooth, 粗糙的 rough 硬的 hard 褐色的 brown, 浅褐色的 light brown, 深褐色的 dark brown, 紫色的 purple, 黑褐色的 black 大的 big, 小的 small, 中等的 average/medium	有小孔的 (that has tiny holes) 没孔的 (that does not have holes) 有破损皮肤的 (that has broken skin)	吸收水分的 (that absorbs water) 眼睛看不见的 (that eyes cannot see)	
Attributive adjective [adj. + 的] + Head noun	Relative clause [(没)有 + noun + 的] + Head noun	Relative clause [verb + noun + 的] + Head noun	
Form focus			
1. Simple descriptive sentence (Subj. + 是 + adj. + 的)			
Modifying phrases can be either attributive adjectives, e.g., 圆的 (round) 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).			
2. Relative clause [verb + noun + 的] + Head noun			
The “是 + adj. + 的” structure is commonly used to describe something or someone. For example, 这个葡萄干是圆的。 (This raisin is round.)			
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 LP 9.4-5.3	Make comparison between two things using A + 比 (comparison marker) + B + (更) + adjective structure		
For example:			
Approaching	Attaining	Expanding	
葡萄干 1 跟葡萄干 2 一样/不一样。 Raisin 1 and 2 are the same/different.	葡萄干 3 比 2 大。葡萄干 1 比 4 更粘糊。 Raisin 3 is even bigger than raisin 2. Raisin 1 is even more squishy than raisin 4.	表皮破裂的葡萄干 1 比葡萄干 3 吸收了更多水分。 Raisin 1 with the broken skin absorbed even more water than raisin 3.	
A + 跟 (and) + B + 一样 (same)/不一样 (different)	A + 比 + B + adv. 更 (even) + adj.	A + 比 + B + (更) + verb phrase	
Form focus: A + 比 + B + (更) + Adj.			
“A” and “B” can be either nouns or noun phrases. 比 (comparison marker) is positioned between A and B with the adjective placed after B.			
Noticing and awareness spotlight: Use of 更 (even, even more)			
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.			

CO LP 9.4-5.4	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		
For example:			
Approaching	Attaining	Expanding	
在葡萄干实验里, 葡萄干 1 是非常非常大。 In the raisin experiment, raisin 1 is very, very big.	在葡萄干实验里, 葡萄干 1 是最大的。 In the raisin experiment, raisin 1 is the biggest.	在葡萄干实验里, 没有比葡萄干 1 更大的葡萄干了。 In the raisin experiment, we don't have any bigger raisin than raisin 1.	
Topic as noun phrase (在 zài + noun + 里 lǐ), main noun/subject + predicate (是 (be verb) + adj. + 的).	Topic as noun phrase (在 zài + noun + 里 lǐ), subj. + predicate (是 (be verb) + 最 superlative + adj. 大 + 的).	Topic as noun phrase (在 zài + noun + 里 lǐ), subj. + negation + verb + 比 (comparison marker) + noun phrase + 更 (than)...	

Form focus
1. The superlative adverb 最
<p>最 is an adverb that indicates the superlative form meaning “most,” “-est” and is placed immediately before the verb or adjective it modifies.</p> <p>For example, Juan Daniel 最喜欢踢足球。(Juan Daniel likes to play soccer the most.) 在葡萄干实验里，葡萄干 1 是最大的。(In the raisin experiment, raisin 1 is the biggest.)</p>
2. Use of “在 ... 里” as topic phrase
<p>在 zài ... 里 lǐ: describing time or location “in” or “inside of”</p> <ul style="list-style-type: none"> 在葡萄干实验里: in the raisin experiment 在足球场上: on the soccer field
Noticing and awareness spotlight: Use of “没有比……更” expression
<p>没有比……更(Don’t have more ... than ...)</p> <p>Negative particle + verb + comparative</p> <p>Another way to express the superlative is to say there is nothing –er (better, bigger, worse, etc.).</p>

CO LP 9.4-5.5	State a contrast using contrastive clauses and adverbs of quantity or frequency	
For example:		
Adverbs of frequency		
总是，从来不 always, never 通常，经常 usually, often 有时 sometimes	常常，不常常，几乎不 frequently, infrequently, seldom 大多数，通常地，大部分 mostly, commonly, largely 有时 occasionally, on occasion 通常地，持续地 constantly, continuously	极少地 rarely 正常地，典型地，一般地 normally, typically, generally 重复地，常规地 repeatedly, regularly 间歇地 sporadically intermittently, spasmodically 习惯性地，主要地 habitually, chiefly 主要地 predominantly

Adverbs of quantity		
只有 only	通常 mostly	都 all
Approaching	Attaining	Expanding
葡萄干 1, 2, 3 是湿的, 圆的, 可是葡萄干 4 是干的, 硬的。 Raisins 1, 2, and 3 are wet and round, but raisin 4 is dry and hard.	葡萄干 2, 3, 4 都看起来又鼓又硬, 然而, 葡萄干 1 看起来小。 Raisins 2, 3, and 4 all look plump and hard, however, raisin 1 looks small.	葡萄干 1, 3, 4 都看起来是深褐色的, 硬的, 相比而言, 葡萄干 2 看起来主要是浅褐色的, 糊状的。 Raisins 1, 3 and 4 all look dark brown and hard, in contrast, raisin 2 looks predominantly light brown and squishy.
Subj. + predicate (是 verb + adjective + 的), 可是 (conj. "but") + subj + predicate (是 verb + adjective + 的).	Subj. + adv. of quantity + verb + parallel conjunction 又... 又..., 然而 (conj. "however"), + subj + verb + adjective.	Subj. + adv. of quantity + verb + object complement [是 verb + adjective + 的], four-character idiomatic expression, subj + verb + adv. of frequency + object complement [是 verb + adjective + 的].
Form focus		
1. Placement of adverb of quantity/frequency		
In most cases, adverbs of quantity/frequency are placed directly after the subject and in front of the main verb. For example, 我工作的时候常常采用一些步骤。(Juan Daniel storybook, p. 41) In my work I frequently use certain steps.		
2. Use of the conjunction 又...又... (both...and...)		
The conjunction 又...又... (both...and...) is used to indicate two co-existing situations or actions. The grammatical structure is “又 + adj/verb + 又 + adj/verb.” For example: “又 + adj. + 又 + adj.”* 葡萄干 2, 3, 4 都看起来又鼓又硬。Raisins 2, 3, and 4 all look plump and hard. “又 + verb + 又 + verb.” 队友们又跳又叫。The teammates are both jumping and shouting.		
3. Use of “perception verb + 起来 complement + adjective”		
This structure expresses that the subject “looks/sounds/smells/tastes/feels like” the meaning communicated by the adjective. Frequently used perception verbs include 看 (look), 听 (sound), 尝 (taste), 闻 (smell), etc.		

Some examples:

葡萄干 2, 3, 4 都看起来又鼓又硬。 Raisins 2, 3, and 4 all seem plump and hard.

Ms. Peters 建议听起来不错。 Ms. Peters' suggestion sounds good.

Pupusas 尝起来不错。 Pupusas taste good.

Noticing and awareness spotlight

1. Use of four-character idiomatic expressions

Four-character idiomatic expressions are commonly used phrases that carry a great of meaning beyond the four characters themselves. They have their origins in traditional Chinese stories, myths and historical facts and are best understood within these contexts. There are about 5,000 such expressions in use. A commonly used four-character idiomatic expressions found in the examples above is: 相比而言 (in contrast)

To pique student curiosity about these idiomatic expressions, teachers will need to research their origins and discuss the historical context with students.

2. Use of the conjunction 又...又... (both...and...)

When two adjectives are used with the conjunction 又...又..., they must be complementary, that is either positive or negative in connotation, for example, 又凉快又舒服 (cool and comfortable), 又热又干燥 (hot and dry). In a similar way, when two verbs are used in this way, the actions must be able to occur at the same time: 又说又笑 (speak and laugh), 又吃又喝 (eat and drink).

CO LP 9.4-5.6	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	
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].	
2. character	
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.	

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])

4. word

A word is written with one or more Chinese characters. A word can consist of a single character (脚, foot), a compound (幸运, lucky), a duplicate (招招手, to wave), or an affixed form (第一, first, 第二, second, etc.).

CO LP 9.4-5.7	Construct characters to form words and phrases adhering to character structure rules and stroke order guidelines
<p>For example:</p> <p>Left-right: 叫、场</p> <p>Top-bottom: 吉、只</p> <p>Left, middle, right: 树、谁</p> <p>Top, middle, bottom: 复、常</p> <p>One-part, totally enclosed: 国、回</p> <p>Partially enclosed: 用、原</p>	



Approaching	Attaining	Expanding
<p>One- and two-part characters</p> <p>One-part character 我、生</p> <p>One-part, totally enclosed 国、回</p> <p>Two-part characters Left-right: 叫、场 Top-bottom: 吉、只</p>	<p>Three-part characters</p> <p>Left, middle, right: 树、谁</p> <p>Top, middle, bottom: 复、常</p> <p>Left, top-right, bottom-right: 锋、纷</p> <p>Top-left, bottom-left, right: 部、剂、劲</p> <p>Left-top, right-top, bottom: 然、赞</p> <p>Top, left-bottom, right-top: 死、前</p>	<p>Four + part characters</p> <p>Left-top, right-top, left-bottom, right bottom: 能、舒</p> <p>Left, top-right, middle-right, bottom-right: 慢、镜</p> <p>Left, middle, top-right, bottom-right: 游</p> <p>Left, middle-top, middle-bottom, right: 湖</p>



Form focus: Formation of Chinese characters

1. Character structure rules

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.

For example,

Two-part structures:  (top/bottom),  (left/right)

Three-part structures:  (left, top-right, bottom-right),  (top-left, bottom-left, right), etc.

2. Stroke order guidelines

General rules for writing Chinese characters are:

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.

CC LP 9.4-5.8	Negotiate to reach consensus	
For example:		
Approaching	Attaining	Expanding
好吧。 OK. 我同意。 I agree.	我同意你的想法。 I agree with your idea. 我也一样。 Same here.	不约而同。 We reach the consensus without consulting with each other.
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>		

Evidence of learning

- 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

Vocabulary List

Content-obligatory (CO)

了解 Recognize			
Pīnyīn	Characters	English meaning	Parts of speech
cè shì	测试	test hypothesis	verb
fēn xī	分析	analyze results	verb
huì bào	汇报	report results	verb
jiǎ shè	假设	make hypothesis	verb
jié lùn	结论	draw conclusions	verb
què rèn	确认	confirmed	verb
tí wèn	提问	ask questions	verb
tuī fān	推翻	disconfirmed	verb
识记 Produce			
Pīnyīn	Characters	English meaning	Parts of speech
bǎo hù	保护	to protect	verb
bó	薄	thin	adjective
bó mó	薄膜	membrane	noun
chī dōng xī	吃东西	to eat	verb
chù xū	触须	antennae	noun
chuān guò/tōng guò	穿过/通过	pass through	verb
guān chá	观察	observe	verb/noun
hē shuǐ	喝水	to drink water	verb
hòu	厚	thick	adjective
jī běn xū qiú	基本需求	basic need	noun
kā fēi guò lǜ zhǐ	咖啡过滤纸	coffee filter	noun
kē xué jiā	科学家	scientist	noun
kē xué rì zhì	科学日志	science notebook/journal	noun
kōng qì	空气	air	noun
pí fū	皮肤	skin	noun
qī xī	栖息	to find shelter	verb
qī xī dì	栖息地	shelter	noun
qiāng láng	蜣螂	Bess beetle	noun
qīng wā	青蛙	frog	noun
rén lèi	人类	human	noun
shí wù	食物	food	noun
shí yàn	实验	experiment	verb/noun

shuǐ	水	water	noun
tè zhēng	特征	properties	noun
xī	吸	breathe	verb
xī shōu	吸收	absorb	verb/noun
xiǎo lóng xiā	小龙虾	crayfish	noun
yá chǐ	牙齿	teeth	noun
yǒu dòng	有洞	has holes	verb
yǒu xiǎo kǒng	有小孔	has small holes	verb
zǔ dǎng	阻挡	block	verb
zǔ dǎng huī chén	阻挡灰尘	blocks dirt/keeps dirt out	verb
zuǐ	嘴	beak	noun

Content-compatible (CC)

了解 Recognize			
Pīnyīn	Characters	English meaning	Parts of speech
bǐ jiào	比较	to compare and contrast	verb
gǔ de	鼓的	plump	adjective
hú zhuàng de	糊状的	squishy	adjective
kā fēi bēi	咖啡杯	coffee cup	noun
shí wù róng qì	食物容器	food container	noun
shuǐ bà	水坝	dam (man-made and human made)	noun
tōng xiāo	通宵	overnight	noun
wén zhàng	蚊帐	mosquito net	noun
xì de	细的	slimy	adjective
yǔ sǎn	雨伞	umbrella	noun
zhì dì	质地	texture	noun
zhòu zhé de	皱褶的	wrinkle	adjective
识记 Produce			
Pīnyīn	Characters	English meaning	Parts of speech
bǎo xiān mó	保鲜膜	plastic wrap	noun
bù tóng de	不同的	different	adjective
bù tóng diǎn	不同点	difference	noun
cái liào guǎn lǐ yuán	材料管理员	Magnificent Materials Manager	noun
chá yè bāo	茶叶包	tea bag	noun
cū cāo de	粗糙的	rough	adjective
dà de	大的	big	adjective

dà xiǎo	大小	size	noun
dàn shì	但是	but	conjunction
gān de	干的	dry	adjective
gōng zuò guǎn lǐ yuán	工作管理员	Terrific Taskmaster	noun
hè sè de	褐色的	brown	adjective
hēi hè sè de	黑褐色的	black	adjective
jì lù yuán	记录员	Remarkable Recorder	noun
jiǎ /cuò	假/错	false	adjective
méi xì le	没戏了!	I'm doomed!	collocation
píng huá de	平滑的	smooth	adjective
pú táo gān	葡萄干	raisin	noun
qiǎn hè sè de	浅褐色的	light brown	adjective
qīng wā de pí fū	青蛙的皮肤	frog skin	noun
shēn hè sè de	深褐色的	dark brown	adjective
shī de	湿的	wet	adjective
shǒu mén yuán	守门员	goalie	noun
sù liào shuǐ píng	塑料水瓶	plastic water bottle	noun
suàn le	算了!	Forget it!	collocation
suǒ yǒu	所有	all	adjective
tōng cháng	通常	mostly	adverb
xiāng sì de	相似的	similar	adjective
xiāng tóng diǎn	相同点	similarity	noun
xiǎo de	小的	small	adjective
xíng zhuàng	形状	shape	noun
yǎn shì zhì jiǎn yuán	演示质检员	Polished Presenter	noun
yìng de	硬的	hard	adjective
yǒu gòng tóng diǎn	有共同点	in common	verb phrase
yǔ lín de huá gài	雨林的华盖	rain forest canopy	noun
yuán de	圆的	round	adjective
zhēn /duì	真/对	true	adjective
zhēn dǎo méi	真倒霉!	Shoot!	collocation
zhǐ yǒu	只有	only	conjunction
zhōng děng de	中等的	average/medium	adjective
zhōng wén dū chá yuán	中文督察员	Chinese Champion	noun
zǐ sè de	紫色的	purple	adjective
zú qiú wǎng	足球网	soccer goal net	noun

对与错听力理解表

姓名 _____ 日期 _____

说明：仔细听每个小组的成员讲述有关青蛙、人类、蛻螂和小龙虾的基本需求。每个人会重复两次。判断他们说对还是错。如果错误，请写出理由。

第一组： 这组说的基本需求是什么？ _____

	对还是错?	如果是错的, 为什么?
1	对 错	
2	对 错	
3	对 错	

第二组： 这组说的基本需求是什么？ _____

	对还是错?	如果是错的, 为什么?
1	对 错	
2	对 错	
3	对 错	

第三组： 这组说的基本需求是什么？ _____

	对还是错误?	如果是错的, 为什么?
1	对 错	
2	对 错	
3	对 错	

第四组： 这组说的基本需求是什么？ _____

	正确还是错误?	如果是错的, 为什么?
1	对 错	
2	对 错	
3	对 错	

第五组： 这组说的基本需求是什么？ _____

	正确还是错误?	如果是错的, 为什么?
1	对 错	
2	对 错	
3	对 错	

第六组： 这组说的基本需求是什么？ _____

	正确还是错误?	如果是错的, 为什么?
1	对 错	
2	对 错	
3	对 错	

第七组： 这组说的基本需求是什么？ _____

	正确还是错误?	如果是错的, 为什么?
1	对 错	
2	对 错	
3	对 错	

True-False Listening Comprehension Charts

Name: _____ Date: _____

Listening Task: Listen carefully as each member of the group presents **two times** his/her statement about the basic needs for the frog, human, Bess beetle and crayfish. While listening to each presenter, indicate if you think the statement is true or false by circling the appropriate letter below. T = True and F = False. If **false**, write why you think it is false.

Group #1: What is the basic need? _____

	True or False?		If false, why do you think so?
1.	T	F	
2.	T	F	
3.	T	F	

Group #2: What is the basic need? _____

	True or False?		If false, why do you think so?
1.	T	F	
2.	T	F	
3.	T	F	

Group #3: What is the basic need? _____

	True or False?		If false, why do you think so?
1.	T	F	
2.	T	F	
3.	T	F	

Group #4: What is the basic need? _____

	True or False?		If false, why do you think so?
1.	T	F	
2.	T	F	
3.	T	F	

Group #5: What is the basic need? _____

	True or False?		If false, why do you think so?
1.	T	F	
2.	T	F	
3.	T	F	

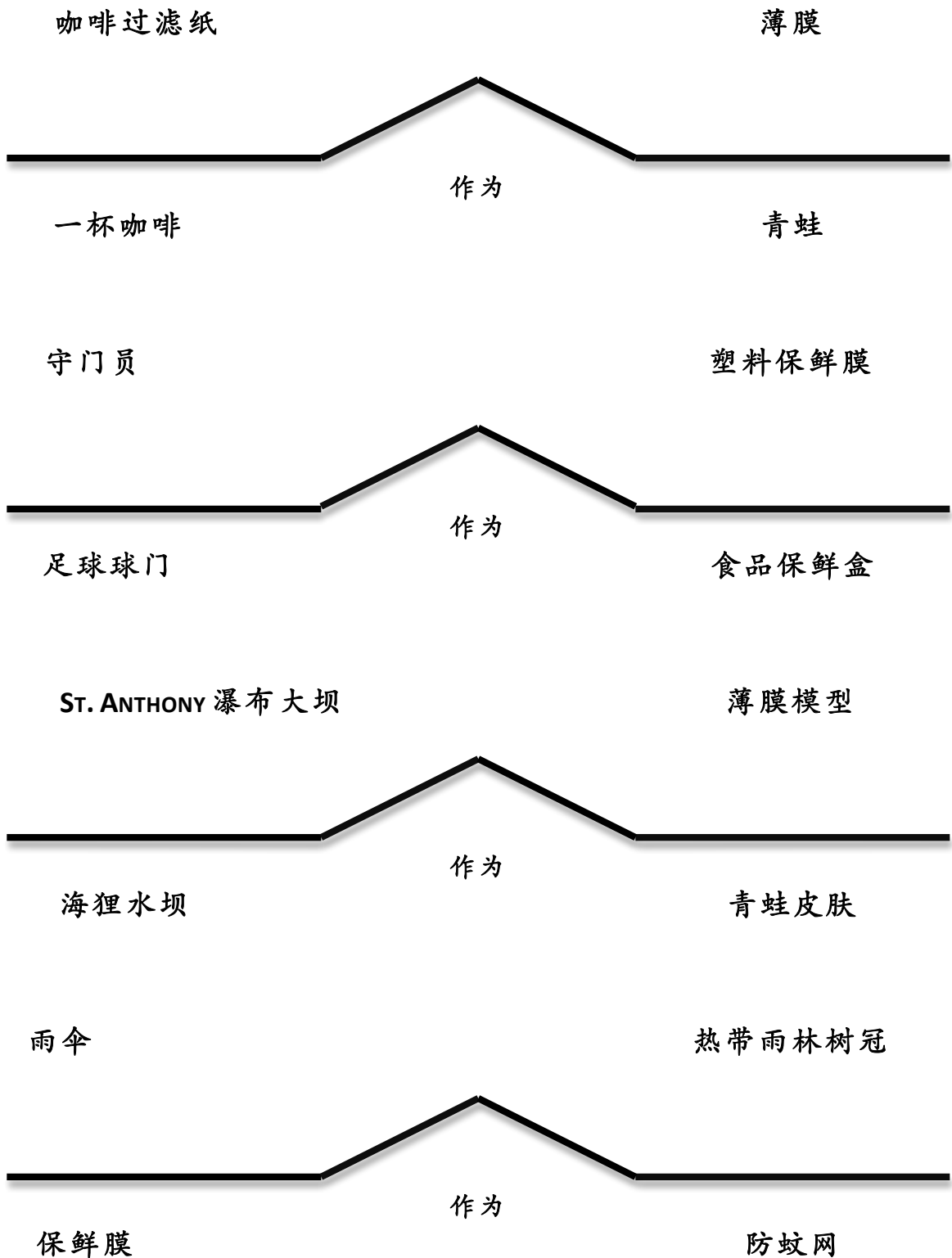
Group #6: What is the basic need? _____

	True or False?		If false, why do you think so?
1.	T	F	
2.	T	F	
3.	T	F	

Group #7: What is the basic need? _____

	True or False?		If false, why do you think so?
1.	T	F	
2.	T	F	
3.	T	F	

桥线图—例子



姓名： _____

日期： _____

填空： 薄膜

说明： 请在下面空白处填入适当的词，完成“薄膜”的定义：

薄膜是一种可以让某些东西_____，并且把有害的东西_____在外面，从而_____生物体的结构。



阻挡
保护
穿过
薄

Name: _____ Date: _____

Membrane: Fill in the Blanks

Complete the definition of “membrane” using words from the list below.

A membrane is a _____ structure that _____ a living organism by letting some things _____ and by _____ things that would be harmful.



blocking

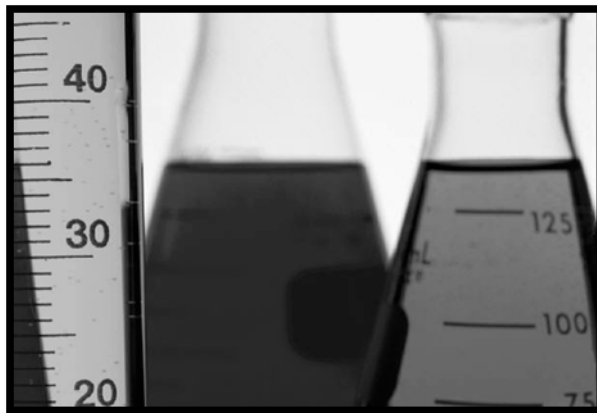
protects

pass through

thin

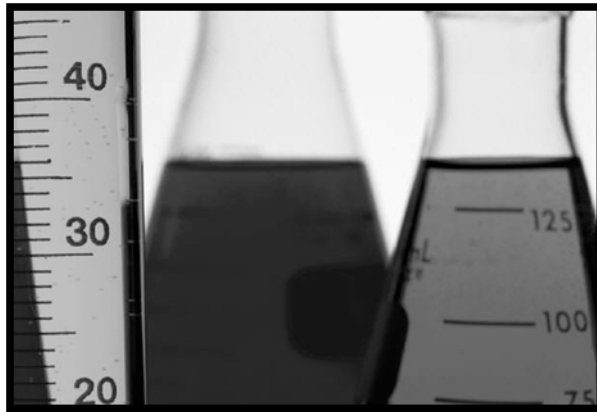
科学方法

1. 作出假设
2. 测试假设
3. 分析结果
4. 得出结论
5. 公布结论



The Scientific Method

1. Make hypothesis
2. Test hypothesis
3. Analyze results
4. Draw conclusions
5. Report conclusions



描述葡萄干

姓名: _____ 日期: _____

说明: 把图片放在这里

质地	颜色	大小

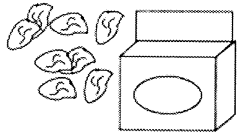
Describing Raisins

Name: _____ Date: _____

Directions: Look at and use words and phrases to describe your raisin.

Texture	Color	Size

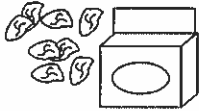
姓名： _____ 日期： _____



探索薄膜: 葡萄干的皮

	葡萄干泡在水里多久了?	你看到葡萄干薄膜上的洞吗?	葡萄干看起来怎么样? 葡萄干有哪些特征?
1号葡萄干			
2号葡萄干			
3号葡萄干			
4号葡萄干			

Name: _____ Date: _____



Exploring Membranes: Raisin Skin

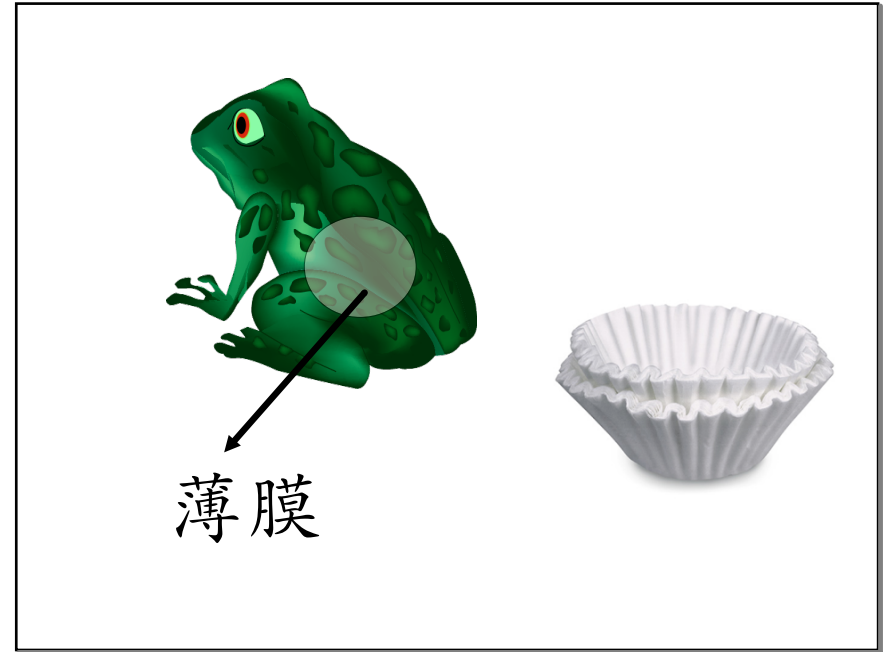
A

B

	How long was the raisin in water?	Do you see holes in the raisin membrane?	What does the raisin look like? What are some of the raisin's properties?
Raisin "1"			
Raisin "2"			
Raisin "3"			
Raisin "4"			

说出这四种动物相同和不同的地方。选择一种基本需求，说一说它们是如何满足这个基本需求的。

小龙虾
蜚螂
人类
青蛙



灰尘

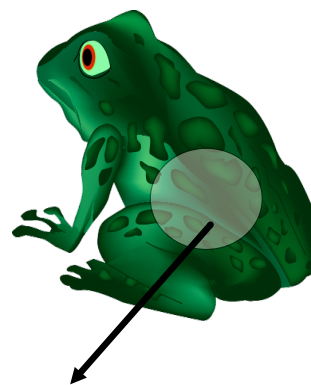
第一组	第二组	第三组
嗨！我是灰尘，我可以从这里通过吗？ 不行。 为什么？ 虽然我们很薄，但是我们可以阻挡灰尘通过。 真倒霉！	嗨！我是灰尘，我可以从这里通过吗？ 不行，我们很厚而且没有洞。任何东西都不能通过我们。 真倒霉！	嗨！我是灰尘，我可以从这里通过吗？ 不行。虽然我们有眼睛看不见的小洞，但是我们可以阻挡灰尘通过。 真倒霉！/算了！/没戏了！

水

第一组	第二组	第三组
嗨！我是水，我可以从这里通过吗？ 可以！ 为什么？ 我们很薄。我们让水/空气通过。 谢谢！	嗨！我是水，我可以从这里通过吗？ 不行。 为什么？ 我们很厚而且没有洞，所以任何东西都不能通过我们。 真倒霉！/算了！/没戏了！	嗨！我是水，我可以从这里通过吗？ 可以 为什么？ 我们有眼睛看不见的小洞。我们让水/空气通过。 谢谢！

空气

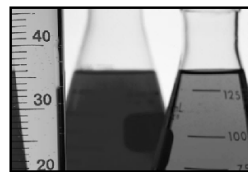
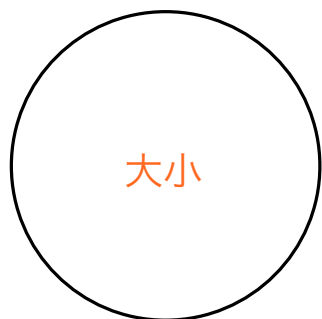
第一组	第二组	第三组
嗨！我是空气，我可以从这里通过吗？	嗨！我是空气，我可以从这里通过吗？	嗨！我是空气，我可以从这里通过吗？
可以！	不行。	可以
为什么？	为什么？	为什么？
我们很薄。我们让水/空气通过。	我们很厚而且没有洞，所以任何东西都不能通过我们。	我们有眼睛看不见的小洞。我们让水/空气通过。
谢谢！	真倒霉！/算了！/没戏了！	谢谢！



薄膜

质地

颜色



科学方法

1. 作出假设
2. 测试假设
3. 分析结果
4. 得出结论
5. 公布结论

比较葡萄干



第一组: 比较1号葡萄干和4号葡萄干(质地、大小和颜色)

第二组: 比较1号葡萄干和2号葡萄干(质地、大小和颜色)

第三组: 比较1号葡萄干和3号葡萄干(质地、大小和颜色)

第四组: 比较四个葡萄干的质地

第五组: 比较四个葡萄干的大小

第六组: 比较四个葡萄干的颜色