Prep Lesson 1: Engineers and Technology

(associated with EiE® Prep Lesson)

Lesson Topic: Who are engineers and what do engineers do? What is technology?

DESIRED RESULTS (教学目标)

Academic Content Objectives: Students can…

Chinese Language Arts

- Analyze structure of characters to infer meaning of words such as "engineer," "technology," and other professions

Science and Engineering

- Define the role of an engineer in the world
- Recognize "technology" as everyday objects made by people to solve a problem or meet a need
- Justify concept of "technology" with examples and non-examples in daily life
- Classify everyday objects as natural and human-made
- Hypothesize about the object in the mystery bag (material made of, problem it solves)
- Analyze everyday objects by type of material and use/function
- Recognize a relationship between "engineering" and nearly everything we use, work with, or wear

Social Studies and Culture

- Classify pictures of workers from three types of professions: engineers, technicians, artisans
- Give reasons for classification decisions
- Recognize that the ancient Chinese also used technology to solve problems and meet basic needs with objects such as chopsticks, the paperweight and the Chinese writing/painting brush.

Learning Strategies: Students can…

- Use background knowledge
- Make inferences from context
- Group or classify
- Use images and real objects to explore a new concept

Chinese Language Objectives: Students can...

Functions and Forms

Content-obligatory (CO)

- State or identify what/who something is or is not
- Support ideas/opinions using compound sentences with adverb 因此
- Describe attributes of something/someone using nominalization within a 是 ….的 sentence structure
- Identify and construct semantic radicals as separate characters or as part of another character
- Describe attributes of something/someone using a predicative adjective(s) construction with the main noun modified by a relative clause
- State use/function of something using nominalization and purpose verb phrase, 来 + verb + object
- Distinguish between the roles and responsibilities of various professionals

Content-compatible (CC)

- Express a personal opinion and request agreement
- Express agreement/disagreement

Vocabulary

	了解 Recognize	识记 Produce
Content- obligatory	**Professional People** 师 suffix indicating "professional", 生物工程师 bioengineer, 技工 technician, 工匠 craftsman/ artisan **Action Words** 设计 to design, 制造 to create, 盖, 建造 to build, 修理 to fix, 修补 repair, 解决 to solve problems, 保证…工作 to make something work	**Professional People** 工程师 engineer, 老师 teacher **Describing Words** 天然的 natural/from nature, 人工的 human-made **Verb Phrases** 负责 be responsible for, 用来 used for **Other Key Words** 技术 technology
Content-compatible	**Professional People** 电脑技工 computer technician, 医疗技术人员 medical technician, 电工 electrician, 航空工程师 aerospace engineer, 木匠 carpenter, 面包师傅 baker, 建筑工人 construction worker, 管道工 plumber, 裁缝 tailor, 建筑师 architect **Action Words** 吸收 to absorb, 记录 to record, 压住 to press...down, 削 to sharpen, 储蓄 to store and save, 保护 to protect, 绑 to tie, 覆盖 to cover, 浏览 to browse, 网上冲浪 to surf online **Technology Picture Cards** 火车 train, 牡丹花 peony, 手机 mobile phone, 桥 bridge, 电视机 television, 茶壶 teapot, 工厂 factory, 创可贴 bandage, 电线杆 power line, 台风 typhoon **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	**Materials** 塑料 plastic, 金属 metal, 布 cloth, 皮革 leather, 毛 feather, 木 wood 石 stone, 竹子 bamboo, 玻璃 glass, 橡皮 rubber, 泥 clay **Verb Phrase** 用……做的 to be made of X material **Action Words** 剪 to cut, 煮/烧 to cook, 播放 to play, 带 to carry, 夹 to pick up using chopsticks, 清理 to clean **Technology Picture Cards** 鞋 shoes, 熊猫 panda, 房子 house, 书 books, 自行车 bike, 筷子 chopsticks **Instructional Activities** 讨论 to discuss, 写 to write

***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, Prep Lesson
- MMIC 1 Prep-IWB: Interactive whiteboard pages for Prep Lesson
- Large sheet of butcher-block paper with T-chart (Column header 1: What is technology? Column header 2: What does an engineer do?)
- Laminated "job" cards for each group
- Handouts:
    a. MMIC 1-1-TG: *List of Everyday Objects*, Teacher Guide
    b. MMIC 1-2: *Picture Cards,* cut into 16 cards that are then placed into an envelope, one envelope per group
    c. MMIC 1-3: (adaptation of "*Technology Around Us*," EiE® {P-1}), one per group
    d. MMIC 1-4: *Who is the Engineer?,* one per group
    e. MMIC 1-5: (adaptation of *"Working with Technology,"* EiE® {P-2}), one per student
- Seven mystery bags, each containing an example of technology (see EiE® 35), be sure to include a few Chinese culture examples of technology (see MMIC 1-1-TG)
- Students' STEM notebooks

LEARNING ACTIVITIES (教学活动)

Preview Phase—"Into" Activities

Time: Learning Activity 1—45 minutes
Learning Activity 2—40 minutes

Note: *To prepare for this lesson, read EiE® binder pages 31-35. Use MMIC 1-1-TG CH, the revised List of Everyday Objects, Teacher Guide. Replace EiE® Introduction on page 36 with MMIC Learning Activities 1-2.*

Learning Activity 1

1. (In advance) On a large piece of butcher-block paper, create a T-chart. Write "什么是技术? (What is technology?)" as the header of the left-hand column and "工程师是做什么的? (What does an engineer do?)" as the header of the right-hand column. Hang this T-chart in the classroom for use later in the lesson.
2. Display page 1 of MMIC Prep 1-IWB: "技术 (Technology)?" "工程师 (Engineer)?" Introduce unit by engaging students in a quest to better understand these two important new words. Begin with a focus on "technology."
3. Tell students that in the next activity they will work in groups to decide if they think a particular object is or is not an example of technology and why.
4. Display page 2 of MMIC Prep 1-IWB. Place students in groups of 5, and assign the following group roles (see below). Distribute job namecards and call students' attention to the sentence starters on the back of their namecards and ask them to refer to them during the next task.

中文督察员 (Chinese Champion)
- Encourages use of Chinese only
- Asks group members to talk about why they think an object is/is not technology
- Assists group members with correct word/phrase as needed

材料管理员 (Magnificent Materials Manager)
- Deals out picture cards to group members
- Collects picture cards and return to teacher in envelope

记录员 (Remarkable Recorder)
- Checks that all group members agree with response
- Writes group's list identifying which objects are/are not technology

工作管理员 (Terrific Taskmaster)
- Makes sure all group members get a turn to speak
- Ensures that other group members are listening

演示质检员 (Polished Presenter)

- Reports group's list of objects that are/are not technology to the whole class

5. All group members communicate their ideas and offer words/phrases to support decisions as to which objects are/are not examples of technology.
6. Distribute envelopes (one to each table/group) with 16 picture cards of different items (MMIC 1-2: *Picture Cards*). Ask **材料管理员 (Magnificent Materials Manager)** to "deal" the picture cards out to their group members so that each person has a similar number of cards.
7. Display page 3 of MMIC Prep 1-IWB: the task directions (below). Clarify as needed.

中文	English
它是技术不是?	**Is it Technology or Not?**
1. 把卡片分成两组：一组是有关技术的，另一组是与技术无关的。	1. Make two piles with the cards: one for things that are examples of technology and the other for things that are not.
2. 轮到你的时候, 选一张卡片并把它放在合适的组里。你一边做，一边要说出你的理由。	2. When it is your turn, you will need to choose one of your cards and place it in one of the two piles. As you do, give reasons for why you think your object is or is not an example of technology.
3. 征求小组其他成员的意见，看看他们是否同意你的理由。如果他们同意，你可以把卡片放在那个组里；如果他们不同意，你要收回那张卡片。	3. Ask group members if they agree or disagree. If all group members agree with your decision, you may leave your card on the pile. If they do not agree with you, you must keep your card.
4. 从工作管理员开始轮流。工作管理员要保证每个组员都有机会讲话，也要保证其他组员都在听。	4. Take turns going around the group beginning with the Terrific Taskmaster. The Terrific Taskmaster should make sure that every group member gets a turn to speak and ensures that other group members are listening.
5. 直到小组每个成员都没有了卡片，游戏结束。	5. Keep playing until everyone in your group has discarded all of their cards.

8. Once students are finished playing the game, invite the **演示质检员 (Polished Presenter)** from different groups to list the pictures that they think are technology. Record answers on page 4 of MMIC Prep 1-IWB so that everyone can see. Check to see if the other groups agree and discuss what makes something a technology. Continue to discuss and refine the list as necessary.
9. Once again, call students attention to the T-chart on the large piece of butcher-block paper. Focus on the first question, "什么是技术? (What is technology?)" and invite students to share any new ideas they have learned. Record and display these ideas in the classroom.

Point out any relevant morphological clues in the word “technology” to help students infer and recall the meaning. For example, the semantic radical for “hand” 手 in the forms of 扌 → 技.

Language Function-Form-Vocabulary Connections (Activity 1)		
CO LP 1.1.1	**State or identify what/who something is or is not**	
For example:		
Approaching	**Attaining**	**Expanding**
这(不)是科技产品。 这 (不)是工程师/技工/工匠/艺人。	这个东西(不)是科技产品。 这个人(不)是工程师/技工/工匠/艺人。	这个东西(不)是科技产品。 这位女士／男士(不)是工程师/技工/工匠/艺人。
This is/is not technology. This is/is not an engineer/technician /craftsman/artisan.	This object is/is not technology. This person is/is not an engineer/ technician/ craftsman/artisan.	This object is/is not technology. This lady/gentleman is/is not an engineer/ technician/ craftsman/artisan.
Pronoun (这) + Verb (是) + noun.	Pronoun (这) + (CL + subj) + Verb (是) + noun.	Pronoun (这) + (CL + subj.) + Verb (是) + noun.
Form focus		
不 (bú) is an adverb that means “not.” Like most adverbs, 不 (bú) always appears before the verb, in this case, 是. 这 is a pronoun and means "this, these." It may or may not be followed by a classifier (CL) and a noun, for example, 这个人是工程师. (This person is an engineer.) 这是工程师. (This is an engineer.)		
Noticing and awareness spotlight: 个人/ 东西 vs. 位女士／男士		
The classifier 个 is the most commonly used classifier when referring to people or things. To indicate more respect for the person being referred to, use 位女士／男士, a more formal classifier + noun for people.		

CO LP 1.1.2	**Support ideas/opinions using compound sentences with adverb 因此**	
For example:		
Approaching	**Attaining**	**Expanding**
我们认为这个东西(不)是科技产品，**因为**…..。	这个东西自然生长，**因此**，我们认为它是.....	**由于**这个人造的东西解决问题，**因此**，我们认为这是.....

We think this object is/is not technology, because….	This object grows naturally, as a result we think it is ……	Due to this human-made object solving a problem, as a result we think it is ……
....., 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.		

CC LP 1.1.3	**Express a personal opinion and request agreement**	
For example:		
Approaching	**Attaining**	**Expanding**
我觉得／想 ……, 你呢? I feel like/think……， and you? 也许／可能, 你呢? Maybe/perhaps…., and you?	在我看来…… ……, 你也同意吗? It seems to me like…, do you agree? 对我来说, ……,你也同意吗? In my opinion, ….., do you agree? 我认为……,你也同意吗? I believe/think …, do you agree?	我建议……,你也是这么想的吗？/吧? I suggest…, do you think so? 我的看法是……,你也是这么想的吗？/吧? My thoughts are……, do you think so? 我是说……,你也是这么想的吗？/吧? What I mean is……, do you think so?
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.		

CC LP 1.1.4	**Express agreement/disagreement**	
For example:		
Approaching	**Attaining**	**Expanding**
好。 Good. 我同意。 I agree. 我也是／同意。 I also + verb (am/agree). 对。 Exactly/Correct.	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.
不。 No. 不好。 Not good。 不同意。 I don't agree with you. 不对。 Not exactly.	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
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.		

Learning Activity 2

1. Begin with steps #4-6 of EiE® Introduction found in the EiE® binder, pages 36-37.
2. Next, follow steps in the "Activity" section of the EiE® binder, page 38 ("Mystery Bag" activity).
   Here are those same steps in Chinese with a few adaptations:

Note: *Do not use the "Technology Around Us" handout from the EiE® binder (EiE® {P-1}). Use the adapted "MMIC 1-3 CH: Technology Around Us" handout instead.*

Activity

1. 将全班分成几个小组，并且发给每组一个"神祕袋"。让学生把袋子打开，传阅袋子里的东西，并且仔细检视它。
2. 让学生思考这些科技产品是设计来解决哪些问题的？这些科技产品是用哪些材料做成的？告诉学生把他们的发现记录在学习单《科技就在我们身边》 (MMIC 1-3 CH: *Technology Around Us* Handout) 上。
3. 每组推出一个代表向大家报告他们的科技产品。跟全班同学讨论下列问题 (Display the following questions using page 5 of MMIC Prep 1-IWB)：

   - 这个东西是天然的还是人造的?
   - 这个东西是用哪些材料做成的?
   - 它解决了哪些问题?
   - 它还可以用来作什么?
   - 它还可以用其他哪些材料来制造?

Language Function-Form-Vocabulary Connections (Activity 2)	
CO LP 1.2.1	**Describe attributes of something/someone using nominalization within a 是 …. 的 sentence structure**

Approaching	Attaining	Expanding
塑料做的(plastic-made) 钢筋做的(steel-made) 布做的(cloth-made) 毛做的 (hair-made) 木头做的(wood-made) 石头做的(stone-made) 竹子做的 (bamboo-made) 泥做的 (clay-made) 橡皮做的 (rubber-made) 天然**的** (nature-made) 人造的 (human-made)	用塑料做的 用钢筋做的 用布做的 用毛做的 用木头做的 用石头做的 用竹子做的 用泥做的 用橡皮做的	**球鞋所用的**
桥**是**石头做的. The bridge is stone-made.	茶壶是用泥做的。 The teapot is made of clay.	球鞋所用的材料是人工的. The material that the soccer shoes use is human-made.
Subj. + verb 是 + adj. [noun + verb 做] + 的.	Subj + verb 是 + nominalization [verb phrase (用 + noun + 做) + 的]。	Relative clause [noun + 所 + verb + 的] + head noun + verb 是 + adj. + 的.

Form focus

1. Simple descriptive sentence (Subj. + 是 + adj. +的)

The "是 + adj. +的" structure is commonly used to describe something or someone. For example, 这个物件**是**天然**的**。(This object is natural.)

2. Nominalization ending with 的

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…).

- 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.

CO LP 1.2.2	**State use/function of something using nominalization and purpose verb phrase, 来 + verb + object**

Approaching	**Attaining**	**Expanding**
剪刀剪纸。 Scissors cut paper。	剪刀是用来剪纸的。 Scissors are used for cutting paper.	剪刀的功能是用来剪纸的。 The function of scissors is to cut paper.
Subject + verb + object.	Subj. + verb 是 + nominalization [用来+ verb + object + 的].	Noun phrase [Noun + 的 to indicate possession + noun] + verb 是+ nominalization [用来+ verb + object + 的].

Form focus

1. Nominalization using 的

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…).

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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.

2. Multiple uses of 来

1. "来" as an action verb, meaning "to come".
   e.g., 他昨天来过两次。 (He came twice yesterday.)
2. "来" is used to replace the verb in previous sentence.
   e.g., 把这把这杯茶**喝**完，我们再**来**一瓶！ (Drink up this cup of tea, we will drink another!)
3. "来" is p+laced 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.)
4. "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!)

Focused Learning Phase— "Through" Activities

Time: Learning Activity 3—45 minutes
Learning Activity 4—30 minutes

Learning Activity 3

1. Display page 6 of MMIC Prep 1-IWB (same as page 1): "技术 (Technology)?" "工程师 (Engineer)?" Ask students which word they recognize ("technology") and invite them to share some things they have learned about that word. Let students know that they will now turn attention to the second new word, "工程师 (engineer)."
2. Show page 7 of MMIC Prep 1-IWB: 12 numbered photos along with the question "谁是工程师？ (Who is the engineer?)" Each photo shows a person who is either an engineer (工程师), technician (技工), or an artisan (工匠). Briefly discuss how these three professions are different. (An artisan *builds or makes* things. An engineer *designs* things. A technician *fixes or makes* things *work*.)
3. Invite a student to read the beginning of the question aloud, "Who is …?" Draw his/her attention to the word for engineer. Ask student if s/he sees any structural clues in the characters that might help him/her guess the meaning of the word "engineer." Invite classmates to assist if needed.
4. Tell students that they will work together in groups to identify who among these people is/is not an engineer and why they think this. Ask students to work in their same groups for the next activity, and assign the following group tasks (see below). Display page 8 of MMIC Prep 1-IWB as you clarify role expectations.

中文督察员 (Chinese Champion)
- Encourages use of Chinese only
- Circles familiar characters/parts of characters on handout based on group's ideas
- Assists group members with correct word/phrase as needed

材料管理员 (Magnificent Materials Manager)
- Picks up handout MMIC 1-4: *Who is the Engineer?* and distributes in group
- Reports group's engineer/not an engineer choices

记录员 (Remarkable Recorder)
- Writes group responses on MMIC 1-4: *Who is the Engineer*?

工作管理员 (Terrific Taskmaster)
- Makes sure group manages time/task well
- Leads group from picture #1 - #12

演示质检员 (Polished Presenter)

- Offers words or phrases that support their group's thinking
- Records these ideas on the whiteboard

5. All group members communicate their ideas and offer words/phrases to support decisions as to which workers are/are not engineers.
6. Display page 9 of MMIC Prep 1-IWB: It shows handout MMIC 1-4: *Who is the engineer?* Read task directions for next activity aloud:

中文	English
以小组为单位，看图回答问题。白板上有 12 副图片。按照白板上的顺序，每个工作人员的名称被写在以下的表格里。圈出所有熟悉的字或偏旁，然后决定哪些图片中的人可能是工程师。根据你们小组的判断，写出“是工程师”或“不是工程师”，而且用几个字写出你们的理由。	In small groups, look at the 12 pictures displayed on the whiteboard. The name of each worker is written in the corresponding box below. Circle any familiar characters or parts of characters. Decide which of the workers in these photos might be engineers. If your group thinks the worker may be an engineer, write “engineer” in the appropriate box. If not, write “not an engineer.” Then, write words and/or phrases in each box that provide support for your thinking.

7. Ask students if there are any questions about the task and clarify as necessary. Before beginning the task, model and provide practice for writing the word “工程师 (engineer)” with correct stroke order and character structure and complete the first box as an example.
8. Display page 10 of MMIC Prep 1-IWB for this group activity: 12 numbered photos along with the question “谁是工程师？ (Who is the engineer?)”
9. Give students 5-10 minutes to complete the activity.
10. Invite **材料管理员 (Magnificent Materials Manager)** to identify which of the 12 workers their group thought was an engineer. On the whiteboard display page 11, MMIC 1-4: *Who is the Engineer?* and write “is an engineer” or “is not an engineer” in each box that is identified as groups report.
11. Invite **中文督察员 (Chinese Champion)** to come to the whiteboard and circle any character clues that helped identify the engineers and non-engineers. Then, invite **演示质检员 (Polished Presenter)** to offer words or phrases that support their group's thinking and record these on the whiteboard as well. Summarize student responses and highlight the idea that one of the ways we know who someone is by understanding what they do. For example, “我是一名教师因为我…… (I am a teacher because I…); “你是一名学生因为你…. (You are a student because you…).
12. Call students' attention to the large piece of butcher-block paper with the T-chart and question, “工程师是做什么的 (What does an engineer do)?” Invite students to share their

ideas and as they do, record any words or phrases that help to define an engineer. Leave the T-chart displayed in the classroom so that it can be referenced and added to during the remainder of the lesson and unit.

Language Function-Form-Vocabulary Connections (Activity 3)		
CO LP 1.3.1	**State or identify what/who something is or is not**	
For example:		
Approaching	**Attaining**	**Expanding**
这(不)是科技产品。 这 (不)是工程师/技工/工匠/艺人。	这个东西(不)是科技产品。 这个人(不)是工程师/技工/工匠/艺人。	这个东西(不)是科技产品。 这位女士／男士(不)是工程师/技工/工匠/艺人。
This is/is not technology. This is/is not an engineer/technician /craftsman/artisan.	This object is/is not technology. This person is/is not an engineer/ technician/ craftsman/artisan.	This object is/is not technology. This lady/gentleman is/is not an engineer/ technician/ craftsman/artisan.
Pronoun (这) + Verb (是) + noun.	Pronoun (这) + (CL + subj) + Verb (是) + noun.	Pronoun (这) + (CL + subj.) + Verb (是) + noun.
Form focus		
不 (bú) is an adverb that means “not.” Like most adverbs, 不 (bú) always appears before the verb, in this case, 是. 这 is a pronoun and means "this, these." It may or may not be followed by a classifier (CL) and a noun, for example, 这个人是工程师. (This person is an engineer.) 这是工程师. (This is an engineer.)		
Noticing and awareness spotlight: 个人/ 东西 vs. 位女士／男士		
The classifier 个 is the most commonly used classifier when referring to people or things. To indicate more respect for the person being referred to, use 位女士／男士, a more formal classifier + noun for people.		

CO LP 1.3.2	**Support ideas/opinions using compound sentences with adverb 因此**	
For example:		
Approaching	**Attaining**	**Expanding**
我们认为她是……，**因为** ……。	这个人设计/修理/制造，**因此**，我们认为……	**由于**这个人设计/修理/制造，**因此**，我们认为……

We think s/he is……, because….	This person is designing/fixing/ making, as a result, we think……	Due to this person making/ designing/fixing, as a result we think s/he is ……
....., 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.		

CC LP 1.3.3	**Express a personal opinion**	
For example:		
Approaching	**Attaining**	**Expanding**
我觉得／想 …… I feel like/think…	在我看来…… It seems to me like…	我建议…… I suggest…
也许／可能 maybe, perhaps	对我来说，…… In my opinion, …	我的看法是…… My thoughts are…
	我认为…… I believe/think …	我是说…… What I mean is…

CO LP 1.3.4	**Identify and construct semantic radicals as separate characters or as part of another character**
For example: 言 (yán, speech), when used as a semantic radical, turns into 讠, e.g., 说 (to speak) 牛 (niú, ox), when used as a semantic radical, has two forms: 牜, e.g., 物 (object) or 牛, e.g., 告 (to tell) ***Note:*** *At the end of this lesson on pages 29-30 you will find a table that provides 50 most frequently used radicals.*	

Approaching	**Attaining**	**Expanding**
Some semantic radicals can be stand-alone characters and do not change form when used as part of another character: 大 (big), 天 (sky/heaven/day) 虫(insect), 蛙 (frog) Some semantic radicals can only be part of other characters: 疒 (sick), 病 (illness, sick) 艹 (grass), 草 (grass)	Some semantic radicals change form when used as part of another character: 手 (hand) could be in the forms of 扌→ 把 ("bǎ") or 手→看 (look) 金 (gold) will be in the form of 钅→锻炼 (exercise)	Some less commonly used semantic radicals: 矢 (shǐ, arrow) as in 矮 (short) 身 (shēn, body) as in 躺 (to lie down)

Form focus

1. Semantic radicals

There are about 201 semantic radicals used in 7,000 characters listed in the *Statistics of Commonly Used Characters* 《现代汉语通用字表》 (1998). Among 201 radicals, 100 are frequently used in high frequency characters (Shen, 2007). Historically, semantic radicals are all integral characters. Take the above mentioned character 蛙 as an example: the left part of the character 虫 (insect) is a semantic radical and it suggests the meaning of this character "tadpole." However, 虫 by itself is also an independent character. A few semantic radicals, however, no longer appear as independent characters in modern Chinese.

Semantic radicals can cue the meaning of the compound characters. For example, more than 90% of compound characters with the semantic radical 手 (hand) have their meanings related to the hand or to the action of the hand (Jin, 1985). However, the semantic radical suggests only a general category of meaning of the compound; it does not provide a specific meaning or definition. Take the character 河 (river) for example: the semantic radical in this character is 氵 (water), which suggests that its meaning has some relationship only to water; it does not provide the exact meaning *river*.

2. Placement of semantic radicals

There are rules of thumb for where to place radicals:

1. Left part of the character
2. Right part of the character
3. Top part of the character
4. Bottom part of the character
5. Whole-word frames: 口 (surround), totally enclosed, and 疒 (sickness) or 辶 (to go, movement), examples of partially enclosed

Learning Activity 4

Follow steps in the "Reflection" sections of the EiE® binder, page 39 ("Mystery Bag" activity). Here are those same steps in Chinese with a few adaptations:

Reflection

1. 回到引起动机时学生对下列问题的回答：「什么是工程师？」「什么是科技？」
2. Skip step #2 in the "Reflection" section on page 39. Replace with the following:
3. Ask students to talk in their groups and come up with their own definition of "technology" and an "engineer." Invite students to share their ideas with the whole class. Co-construct with student input a class definition and write it on the T-chart that is hanging in the classroom. This will be displayed during the remainder of this lesson. Then, ask students to offer examples of "engineer" and "technology." Add these examples to the T-chart with a simple drawing beside each word.
4. (Step #3 in the "Reflection" section on page 39.) 向学生们强调：即使我们不完全了解这些东西的功能，但是几乎所有使用的和穿的东西都是工程产品。有人负责思考如何设计这些产品来解决特定的问题—科技就在我们的身边。
5. Introduce students to a few Chinese technologies and technological achievements and discuss the kinds of human problems these technologies solve. Please refer to MMIC 1-1-TG for a list of sample technologies and their purposes.

Language Function-Form-Vocabulary Connections (Activity 4)	
CO LP 1.4.1	**Describe attributes of something/someone using a predicative adjective(s) construction with the main noun modified by a relative clause**

For example:

Approaching	Attaining	Expanding
工程师设计技术。 An engineer designs technology. 水瓶盛水。 A water bottle carries water.	工程师是一个设计技术的人。 An engineer is someone who designs technology. 水瓶是一种人造的可以盛水的技术。 A water bottle is a man-made technology that can carry water.	设计宇宙飞船的航空工程师是工程师的一种。 An aerospace engineer who designs spaceships is one kind of engineer. 可以盛水的水瓶是技术的一种。 A water bottle that can carry water is one kind of technology.
Subject noun + action verb + direct object	Main noun + "be" verb + relative clause [verb + object + 的] + head noun	Relative clause [verb + object + 的] + subject noun + "be" verb + noun phrase [noun + 的 + noun]

Form focus: Relative clause [verb + noun + 的] + Head noun

Modifying phrases can be either attributive adjectives, e.g., **大的** (big) or relative clauses, e.g., 可以 (can) 盛水 (carry water) + 的 (that can carry water). Relative clauses as modifying phrases are placed in front of the head noun.
For example,
一个**设计科技的** +人 - "someone who designs technology"
一种人造的**可以盛水的** + 技术 - "a man-made technology that can carry water"

设计宇宙飞船的航空工程师 – "An aerospace engineer who designs spaceships"

Noticing and awareness spotlight: Use of "noun + 的 + noun" to express possession

To indicate ownership/possession, the structure is "noun + 的 + noun", for example, 工程师的一种/技术的一种 means "one kind of engineer/technology."

Expansion Phase— "Beyond" activities

Time: Learning Activity 5—30 minutes

Learning Activity 5

1. Ask students:

中文	English
如果工程师是设计技术的人，那么谁是制作技术的人呢?	If engineers are people who design technology, who are the people who build or make the technology?

2. Invite students to work with a partner to think of the names of other workers in the community who build/make technology (ex., carpenter, plumber, computer programmer).
3. Return to interactive whiteboard page 3 with the 12 photos of engineers, technicians and artisans. Focusing on the photos of artisans and craftsmen/craftswomen, write the words for each on the board as you introduce them. Also, write a definition of an artisan or craftsman/craftswomen. (An artisan *builds or makes* technologies.)
4. Allow students to share examples of artisans/craftspeople. Focus on linguistically relevant structures of "job" words, for example, a character(s) shared in common for this group of people, etc.
5. Ask students:

中文	English
如果工匠是制作技术的人，那么谁是维护和修理技术的人呢?	If artisans and craftspeople are people who build and make technology, who are the people who fix and repair the technology?

   Introduce "technician (技工)" and its definition. (A technician *fixes or makes* technologies *work*.)
6. Allow students to share examples of technicians they have seen. Follow the instructions in "Extension and Reinforcement" on page 40 of the EiE® binder.

Note: *Do not use the "Working With Technology" handout from the EiE® binder (EiE® {P-2}). Instead use the MMIC 1-5 CH: Working With Technology: Artisan, Technician, Engineer?*

7. Distribute MMIC 1-5: *Working With Technology,* one per student. Ask students to complete Part A, the matching task of the handout, #1-6, and encourage them to talk with their group members for assistance.
8. Display page 12 of MMIC Prep 1-IWB. Invite individual students up to the whiteboard to complete the matching task together.

9. Write the sentence stems on page 13 of MMIC Prep 1-IWB, "工匠/技工/工程师的工作是…… (An artisan's/technician's/engineer's job is to…)" and complete those sentences with the class using the sentences in the box on MMIC 1-4: *Working With Technology* as a model. As you do this, ask students to copy these sentences in their STEM notebook.
10. Ask students to return to MMIC 1-5: *Working With Technology: Artisan, Technician, Engineer?* and complete the remainder of this handout.
11. Collect handouts as evidence of learning.

Language Function-Form-Vocabulary Connections (Activity 5)		
CO LP 1.5.1	**Distinguish between the roles and responsibilities of various professionals**	
For example:		
Approaching	**Attaining**	**Expanding**
工程师的工作是设计科技产品，可是技术人员是修理科技产品。 The work/job of an engineer is to design technology, but the technician repairs technology.	工程师负责设计科技产品, 但是技术人员负责修理科技产品. An engineer is responsible for designing technology, but a technician is responsible for repairing technology.	工程师负责设计科技产品, 技术人员则负责修理科技产品。 An engineer is responsible for designing technology, however, a technician is responsible for repairing technology.
Noun phrase [Noun + 的 to indicate possession + noun] + verb (是) + object [verb + noun], conjunction (可是) + noun + verb (是) + object [verb + noun].	Subject + verb (负责) + object [verb + noun], conjunction (但是) + noun + verb (负责) + object [verb + noun].	Subject + verb (负责) + object [verb + noun], noun + conjunction (则) + verb (负责) + object [verb + noun].
Form focus		
1. Use of “noun + 的 + noun” to express possession		
To indicate ownership/possession, the structure is “noun + 的 + noun”, for example, 工程师的工作 means engineer’s work.		
2. Use of 可是, 但是 vs. 则 as contrastive conjunctions		
There are a few different contrastive conjunctions in Chinese such as 可是, 但是 (but) and 则 (however). Whereas 可是, 但是 (but) is placed at the beginning of the second clause, use of 则 (however) in the second clause requires inversion (e.g., it will follow the subject).		

Evidence of Learning

- Completed handouts:
  - MMIC 1-3 (adaptation of *Technology Around Us*, EiE® {P-1}), one per group
  - MMIC 1-4: *Who is the engineer?,* one per group
  - MMIC 1-5: (adaptation of *Working with Technology*, EiE® {P-2}), one per student
- Observation of participation in large and small-group activities

Vocabulary List

Content-Obligatory (CO)

了解 Recognize			
Pīnyīn	**Characters**	**English meaning**	**Parts of speech**
bǎo zhèng …gōng zuò	保证…工作	to make something work	verb
gài	盖	to build	verb
gōng jiàng	工匠	craftsman/artisan	noun
jì gōng	技工	technician	noun
jiàn zào	建造	to build	verb
jiě jué	解决	to solve problems	verb
shè jì	设计	to design	verb
shēng wù gōng chéng shī	生物工程师	bioengineer	noun
shī	师	suffix indicating ‘professional’	noun
xiū bǔ	修补	to repair	verb
xiū lǐ	修理	to fix	verb
zhì zào	制造	to create	verb
bǎo zhèng …gōng zuò	保证…工作	to make something work	verb
识记 Produce			
Pīnyīn	**Characters**	**English meaning**	**Parts of speech**
fù zé	负责	be responsible for	verb
gōng chéng shī	工程师	engineer	noun
kē jì	科技	technology	noun
rén gōng de	人工的	human-made	adjective
tiān rán de	天然的	natural/from nature	adjective
yòng lái	用来	to be used for	verb

Content-compatible (CC)

了解 Recognize			
Pīnyīn	**Characters**	**English meaning**	**Parts of speech**
bǎng	绑	to tie, bind	verb
bǎo hù	保护	to protect	verb
cái féng	裁缝	tailor	noun
chǔ xù	储蓄	to store and save	verb
diàn gōng	电工	electrician	noun

diàn nǎo jì gōng	电脑技工	computer technician	noun
fù gài	覆盖	to cover	verb
guǎn dào gōng	管道工	plumber	noun
háng kōng gōng chéng shī	航空工程师	aerospace engineer	noun
jì lù	记录	to record	verb
jiàn zhù gōng rén	建筑工人	construction worker	noun
jiàn zhù shī	建筑师	architect	noun
liú lǎn	浏览	to browse	verb
miàn bāo shī fu	面包师傅	baker	noun
mù jiàng	木匠	carpenter	noun
wǎng shàng chōng làng	网上冲浪	surf online	verb
xī shōu	吸收	to absorb	verb
xiāo	削	to sharpen	verb
yā zhù	压住	to press…down	verb
yī liáo jì shù rén yuán	医疗技术人员	medical technician	noun
识记 Produce			
Pīnyīn	**Characters**	**English meaning**	**Parts of speech**
bō fàng	播放	to play	verb
bō li	玻璃	glass	noun
bù	布	cloth	noun
dài	带	to carry	verb
jiá	夹	to pick up using chopsticks	verb
jiǎn	剪	to cut	verb
jīn shǔ	金属	metal	noun
máo	毛	feather	noun
mù	木	wood	noun
ní	泥	clay	noun
pí gé	皮革	leather	noun
qīng lǐ	清理	to clean	verb
shí	石	stone	noun
sù liào	塑料	plastic	noun
xiàng pí	橡皮	rubber	noun
yòng …zuò de	用…做的	to be made of X material	adjective phrase
zhú zi	竹子	bamboo	noun
zhǔ/shāo	煮／烧	to cook	verb

Fifty Commonly Used Semantic Radicals

No.	Radical as Character	Radical in Character	Pinyin	Meaning	Example
1		冫	bīng	ice	冰
2	言	讠	yán	speech	说
3	人	亻	rén	person	你
4	刀	刂	dāo	knife	刺
5	力		lì	strength	劲
6	又		yòu	again	取
7		艹	cǎo	grass	草
8	食	饣	shí	food	饭
9		彳	chì	to pace	行
10	糸	纟	mì	silk	紧、红
11		宀	mián	roof	守
12		广	yǎn	shelter	度
13	门		mén	door	闪
14		辶	chuò	to go	过
15	口		kǒu	mouth	唱
16		囗	wéi	surround	国
17	女		nǚ	female	好
18	子		zǐ	child	字
19	大		dà	big	天
20	小	小	xiǎo	small	常
21	土		tǔ	earth	地
22	竹	笁	zhú	bamboo	第
23	示	礻	shì	to notify	神
24	心	忄	xīn	heart	情
25	日		rì	sun	晴
26	月		yuè	moon	服
27	水	氵	shuǐ	water	沿
28	火	灬	huǒ	fire	热
29	木		mù	wood	棵
30	手	扌手	shǒu	hand	把、看
31	父		fù	father	爷
32	户		hù	household	肩
33	牛	牜 牛	niú	ox	物、告
34	犬	犭	quǎn	dog	狗
35	车		chē	vehicle	软

No.	Radical as Character	Radical in Character	Pinyin	Meaning	Example
36	金	钅	jīn	metal	锻
37		疒	bìng	sick	病
38	皿		mǐn	container	盛
39	立		lì	to establish	站
40	石		shí	stone	硬
41	目		mù	eye	眼
42	穴		xuè	cave	空
43	虫		chóng	insect	蛙
44	爪	⺤	zhǎo	claw	爱
45	衣	衤	yī	clothes	初
46	足		zú	foot	跟
47	邑	阝在右	yì	city	邻
48	阜	阝在左	fù	plenty	队
49	雨	⻗	yǔ	rain	零
50	羊	羊 羊	yáng	sheep	美、着

中文教室用

问题	陈述	指令
• ……用中文怎么说? • 我可以/能告诉你……的中文吗? • 我可以/能帮助你吗?	• 你的中文很好! • 你说中文说得真好! • ……的中文是……。 • ……是这个字。	• 请说中文。 • 怎么不用中文呢? • 我们应该用中文。 • 记住我们要用中文啊!

记录用

问题	陈述	指令
• 你让我写什么来着? • 你刚才说什么? • 你能再说一遍吗? • 谁知道那个字怎么写呀? • 这个笔画对不对? • 我应该怎么写这个字? • 这个部首在哪边? • 有人在教室里看到过这个字吗?	• 嗯，我已经写下来了。 • 你说得太快了。 • 我没听懂。 • 我不知道那个怎么写。	• 请你再说一次。 • 你再重复一遍吧。 • 慢一点儿。 • 再告诉我一次吧。 • 请告诉我拼音。

材料管理员

问题	陈述	指令
• 我要拿几个? • 筐子在哪里? • 你/我们需要什么? • 你/我们还需要什么? • 我有没有忘记什么东西?	• 都拿了。 • 这是给你的。 • 我个人都有..... • 等等，我去看看还有没有了。 • 我马上就来。	• 对.....小心一点儿。 • 等一等。 • 请把你的周围打扫干净。

工作管理员

问题	陈述	指令
• 你是不是想说点儿什么? • 谁是下一个? • 是不是每个人都同意这个计划? • 谁干什么?	• 我们只剩下.....分钟了。 • XXX 还没说呢。 • 我们有很好的进展。 • 我们该做下一个部分了。 • .....做得很好，让我们继续做.....	• 我们得快一点儿! • 该 XXX 了! • 马上开始!

演示原始员

问题	陈述	指令
• 你有问题吗? • 每个人都听，好不好?	• 多谢聆听。 • 我很荣幸向你们介绍..... • 我从.....开始 • 作为总结，..... • 当你们.....，我就知道你们准备好要听我说了。 • 我会等到每个人都静下来才开始。	• 请认真听。 • 现在就开始。

Chinese Champion

Questions	Statements	Directives
• How do you say … in Chinese? • Can I tell you the Chinese for that? • Can I help you?	• Your Chinese is very good. • You speak Chinese very well. • …. is …. in Chinese. • The character for … is this.	• Use Chinese please. • Why not use Chinese? • We need to use Chinese. • Remember to use Chinese.

Remarkable Recorder

Questions	Statements	Directives
• What do you want me to write? • What did you just say? • Can you repeat that? • Who knows how to write that word with characters? • Is this the correct stroke? • How do I write this character? • Where does that radical go? • Does anyone see that character in the room?	• Yeah, I wrote it down already. • You speak too fast. • I don't understand. • I don't know how to write that.	• Say it one more time please. • Could you repeat, please? • Slow down. • Tell me again. • Give me the pinyin please.

Magnificent Materials Manager

Questions	Statements	Directives
• How many shall I get? • Where is the bin? • What do you/we need? • What else do you/we need? • Did I forget anything?	• I got everything. • This is for you. • Each person gets … of them. • Just a minute, I'll go see if there are any more. • I will be right back.	• Be careful with the … • Wait a minute. • Please clean your area.

Terrific Taskmaster

Questions	Statements	Directives
• Do you want to say something? • Who is next? • Does everyone agree with the plan? • Who is doing what?	• We only have … minutes left. • XXX hasn't spoken yet. • We're making good progress. • We need to move to the next part. • Good job on ... Let's move on to …	• Let's hurry up! • It is XXX's turn. • Let's get going!

Polished Presenter

Questions	Statements	Directives
• Do you have any questions? • Can everyone listen now?	• Thank you for listening. • I would like to present ... • I will start with ... • In conclusion … • I'll know you're ready to listen when … • I will wait until everyone is listening.	• Please listen carefully. • Let's begin.

每日用品一览表

说明: 复习学生所学的 (EiE, p. 33), 并对容易误解的地方和学习重点有所掌握。

	技术	材料	自然的还是人造的?	用途	可解决的问题
1	塑料盒	塑料	人造的	储存东西	有效地储存固体或流质的东西
2	海绵	塑料的 (厨房用); 海里的天然海绵	人造的或天然的	吸水	把所在出的水吸走
3	订书器	塑料和金属	人造的	订纸	把纸按顺序订在一起
4	剪刀	塑料和金属(不锈钢)	人造的	剪开薄材料	使薄材料的边剪得整齐
5	毛笔	竹子, 羊毫、兔毫或狼毫		书写或绘画	记录手书记录思想或事件
6	筷子	木头, 竹子, 塑料或象牙	天然的或人造的	夹菜吃饭	让手保持清洁
7	镇纸	金属、石头或玻璃	天然的或人造的	把纸或布压在桌子上	免得纸或布被吹跑
8	葫芦	植物	天然的	盛水	有效地把水从一个地方带到另外一个地方
9	水瓶	塑料或不锈钢	人造的	盛水	带着少量的水为个人使用

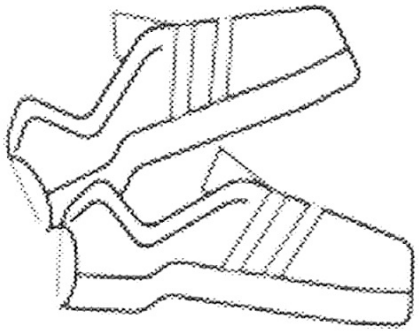
	技术	材料	自然的还是人造的?	用途	可解决的问题
10	足球鞋	钢,皮革, 塑料,泡沫	人造的	保护脚并加强双脚在足球场上的抓地力	帮助运动员在足球场上跑得快和保持平衡
11	橡皮筋	橡胶	天然的或人造的	把东西绑在一起	保持空间整齐和类似物品有序
12	保鲜膜	塑料	人造的	密封食物	保持食物存放更长时间
13	光盘播放机	塑料或金属	人造的	播放音频文件	在更小, 更不容易刮伤的光盘上播放更多的音乐
14	铅笔刀	金属或塑料	人造的	削铅笔	保持铅笔适于书写
15	梳子	木头或塑料	天然的或人造的	梳头	使头发整齐
16	电饭煲	金属, 玻璃或塑料	人造的	蒸米饭	可节省蒸饭时间
17	苹果公司的平板电脑	金属或塑料	人造的	可使用大量的信息和多媒体	比计算机更容易携带

List of Everyday Objects

Directions: *Review student learning section (EiE, p. 33) on possible misconceptions and important insights.*

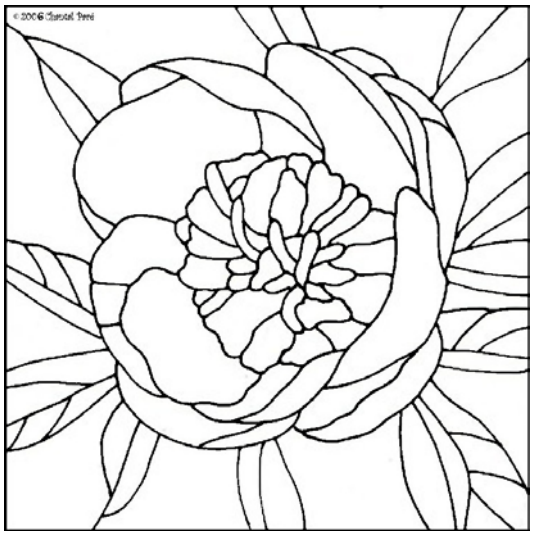
	Technology	Materials	Natural or human-made?	Functions	The problem it solves
1	**Plastic container**	plastic	human-made	collects materials or liquids	collects materials or liquids more efficiently
2	**Sponge**	plastic (kitchen sponge) natural sponge from sea	both	absorbs water	reduces amount of water in a given place
3	**Stapler**	plastic, metal	human-made	join sheets of paper	keeps multiple sheets of paper in a desired order
4	**Scissors**	plastic, metal	human-made	cuts thin materials	gives materials a clean-edge cut
5	**Chinese writing brush**	bamboo, hair (sheep, rabbit, wolf)	natural	writes and paints	provides a scripted record of thoughts and events
6	**Chopsticks**	wood, bamboo, plastic, metal	both	picks up food for eating	keeps hands clean while eating
7	**Paper weight**	metal, stone, glass	both	holds papers and cloth down on the table	keeps papers or cloth from blowing away
8	**"Tecomate"**	plant	natural	carries water	carries water from one place to another place efficiently
9	**Water bottle**	Plastic, metal	human made	carries water	carries small amount of water for personal use
10	**Soccer shoes**	steel, leather, plastic, foam	human made	protects feet and strengthens grip on soccer field	helps people run faster and maintain balance on the soccer field
11	**Rubber band**	rubber	both	binds multiple objects together	keeps space and similar materials organized
12	**Plastic wrap**	plastic	human made	seals food items	keeps food fresh longer

	Technology	Materials	Natural or human-made?	Functions	The problem it solves
13	**CD Player**	plastic, metal	human made	plays audio files	reads more music with a much smaller, more difficult to scratch or break disk
14	**Pencil sharpener**	metal, plastic	human made	sharpens pencil	keeps the pencil good for writing
15	**Hair brush/ comb**	wood, plastic	both	combs/brushes hair	tidies messy hair
16	**Rice cooker**	metal, glass, plastic	human made	cooks rice	saves time if cooking rice
17	**iPad**	metal, plastic	human made	makes large quantities of information and multimedia available	more portable than a computer

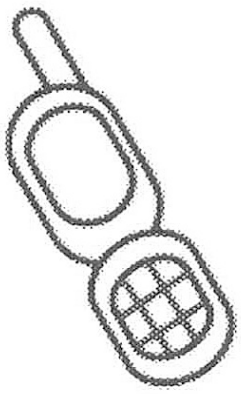


鞋子

火车

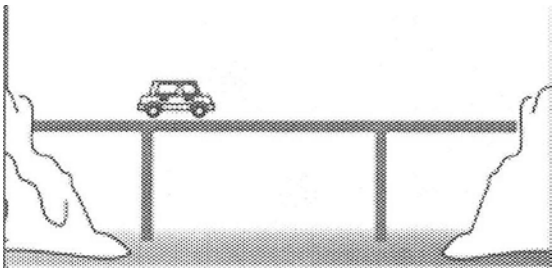


牡丹花

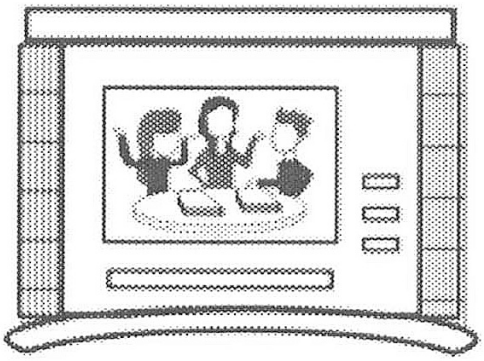


手机

竹子

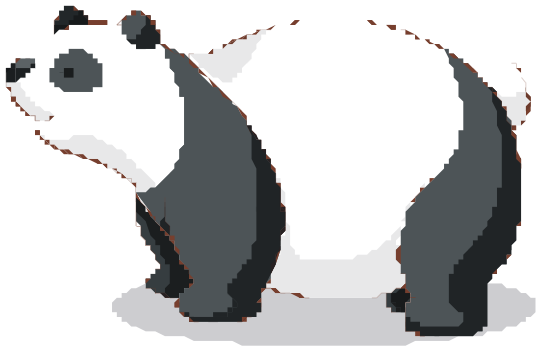


桥

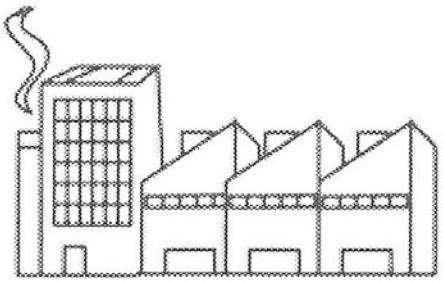


电视机

茶壶



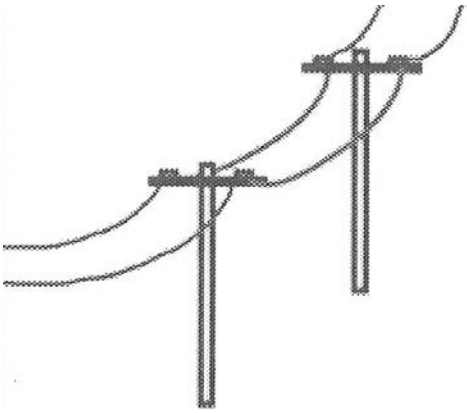
熊猫



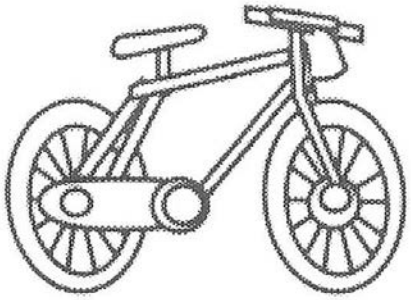
工厂

创可贴

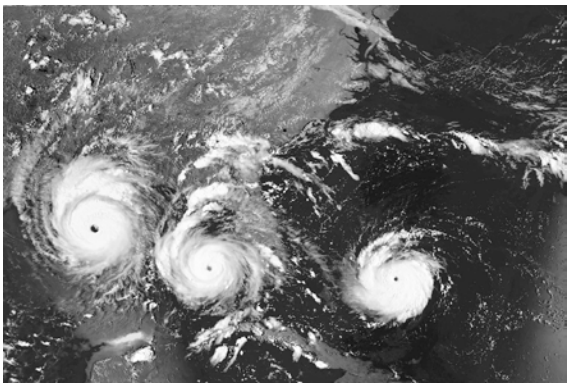
房子



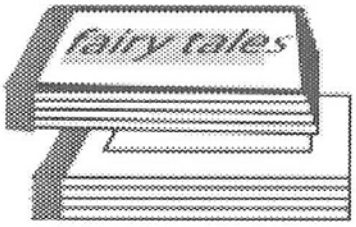
电线杆



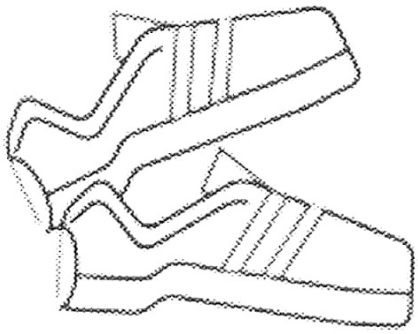
自行车



台风

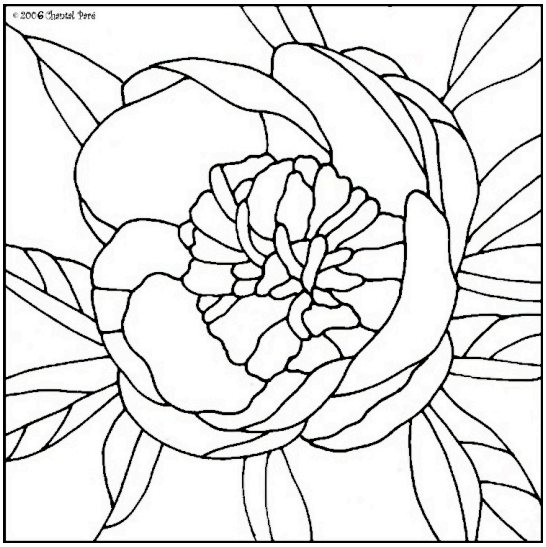


书

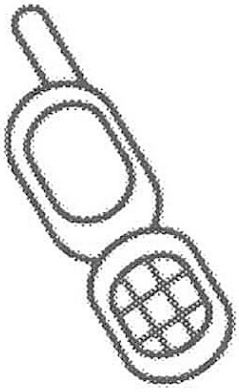


Shoes

Train

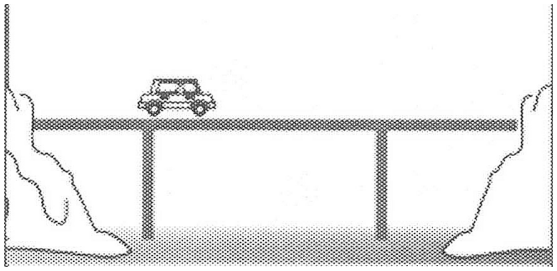


Peony

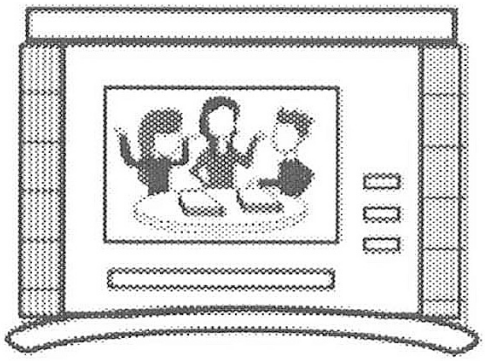


Mobile Phone

Bamboo

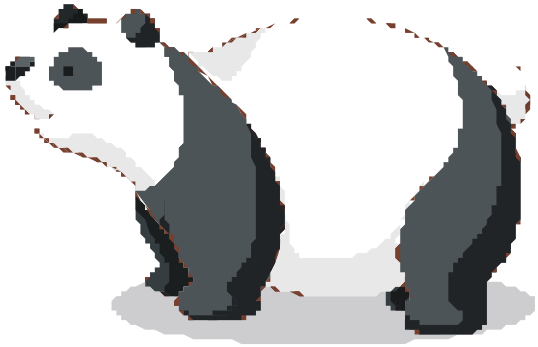


Bridge

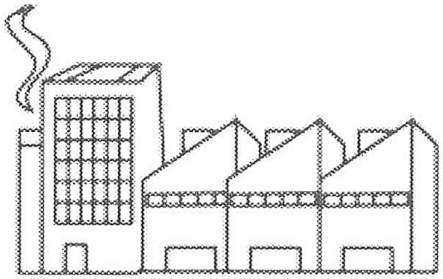


Television

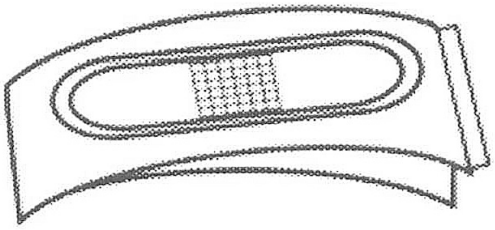
Teapot



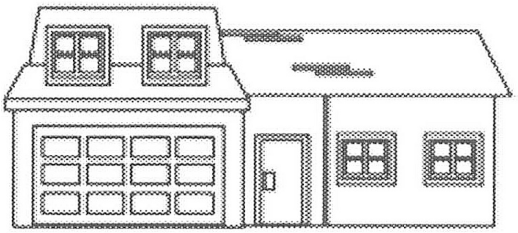
Panda



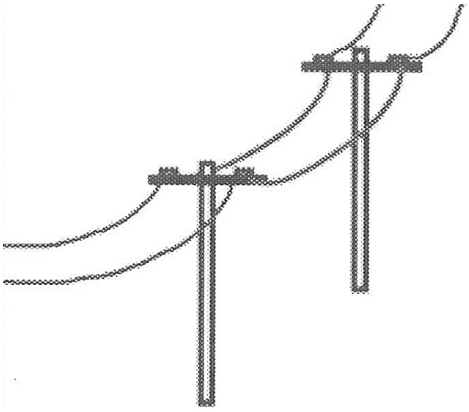
Factory



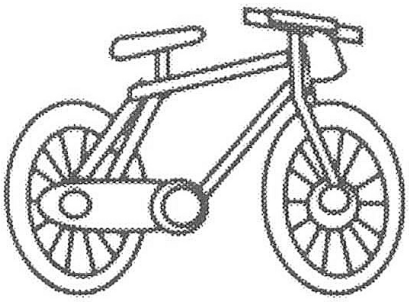
Bandage



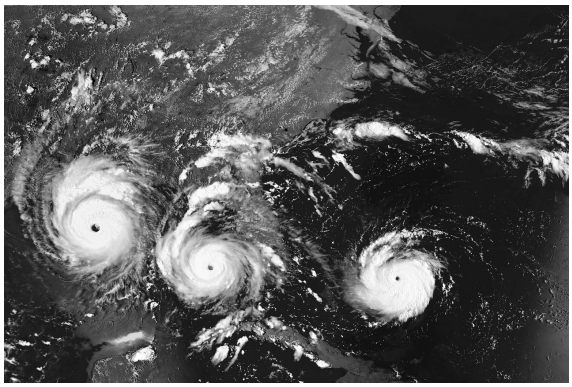
House



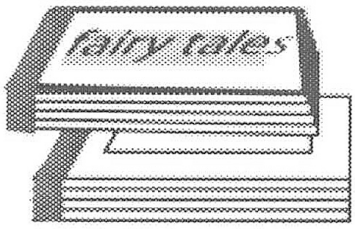
Power Line



Bike



Typhoon



Books

姓名：_____日期：_____

科技就在我们身边

1. 你的袋子里的东西是什么？

2. 把这个东西画在下面的方格里，标出它的各个部分。

3. 这个东西是用来做什么的？它解决什么问题？

姓名：_____日期：_____

4. 这个东西是用哪些材料做成的？

5. 你学过哪些中国特有的科技？

6. 这些中国科技是用来做什么的？它们解决什么问题？

Name: _____ Date: _____

Technology Around Us

1. What is your object? _____

2. Draw a picture of your object in this box. Label the parts.

3. What does your object do? What problem does it solve?

_____

_____

_____

4. What material or materials is your object made of?

_____

_____

_____

5. What Chinese technologies have you learned about?

_____

_____

_____

6. What did they do? What problems did they solve?

_____

_____

_____

姓名：_____日期：_____

谁是工程师？

说明： 以小组为单位，看图回答问题。白板上有 12 副图片。按照白板上的顺序，每个工作人员的名称被写在以下的表格里。圈出所有熟悉的字或偏旁，然后决定哪些图片中的人可能是工程师。根据你们小组的判断，写出“是工程师”或“不是工程师”，而且用几个字写出你们的理由。

1. 面包师	2. 建筑工人	3. 计算机维修员	4. 水管工人
5. 汽车修理工	6. 建筑师	7. 航空工程师	8. 医检师
9. 手工艺术家	10. 裁缝	11. 陶瓷艺术家	12. 生物工程师

Name: _____ Date: _____

Who is the Engineer?

Task: In small groups, look at the 12 pictures displayed on the whiteboard. The name of each worker is written in the corresponding box below. Circle any familiar characters or parts of characters. Decide which of the workers in these photos might be engineers. If your group thinks the worker may be an engineer, write "engineer" in the appropriate box. If not, write "not an engineer." Then, write words and/or phrases in each box that provide support for your thinking.

1. baker	2. construction worker	3. computer technician	4. plumber
5. auto technician	6. architect	7. aerospace engineer	8. medical technician
9. craftsman	10. tailor	11. artisan	12. bioengineer

姓名：_____ 日期：_____

用科技工作的人：工匠、技工、工程师

第一部分 连线题：把以下工作人员的名称和他们的工作连起来。

工匠

技工

工程师

1. 修理飞机。
2. 设计新一代牙刷。
3. 操作 X 光仪器。
4. 建造房屋和商店。
5. 设计新型轮椅。
6. 制作鞋子。

第二部分 工匠、技工、还是工程师？

1. 看白板上的 12 副图片，确定图片上的人物是工匠、技工、还是工程师，然后把图片的号码填在适当的方框内。

工匠	技工	工程师

2. 你想当工匠、技工、还是工程师？为什么？

_____

_____

_____

Name: _____ Date: _____

Working With Technology: Artisan, Technician, Engineer

Part A: Matching task

Draw a line from the person to the kinds of work that he or she does:

Artisan	1. Repairs airplanes.
	2. Designs a better toothbrush.
Technician	3. Runs an x-ray machine.
	4. Builds houses and stores.
Engineer	5. Creates a new wheelchair design.
	6. Makes shoes.

Part B: Artisan, technician or engineer?

1. Looking at the numbered photos on the whiteboard, identify if the person in the photo is an artisan, a technician or an engineer. Put the number of the photo in the appropriate space.

Artisan	Technician	Engineer

2. Which would you like to be—an artisan, a technician, or an engineer? Why?

_____

_____

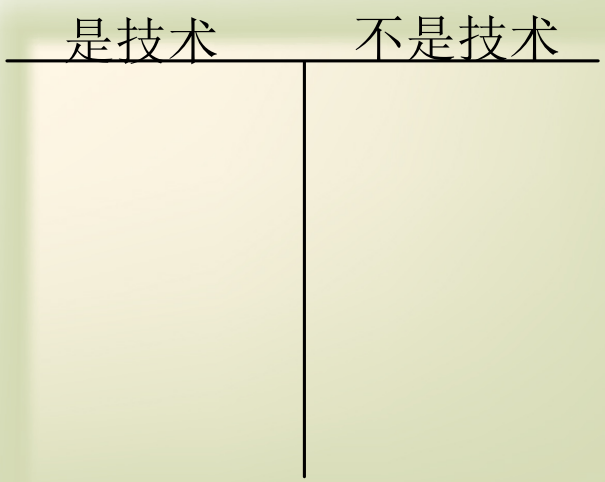
_____

技术 ? 工程师

角色	任务
中文督察员	• 鼓励大家只说中文。 • 问一问小组成员为什么这个东西是技术或不是技术。 • 帮助小组成员使用正确的字词和短语。
材料管理员	• 把卡片分给小组成员。 • 回收并把卡片放回信封里，然后交给老师。
记录员	• 问一问每个小组成员是不是都同意某个答案。 • 把小组的答案记下了：哪个东西是技术或不是技术。
工作管理员	• 确保每个小组成员都有机会发言。 • 确保一个小组成员发言的时候，其他人都认真地听。
演示质检员	• 向全班汇报小组的答案：哪些东西是技术和哪些东西不是技术。

它是技术不是?

1. 把卡片分成两组：一组是有关技术的，另一组是与技术无关的。
2. 轮到你的时候，选一张卡片并把它放在合适的组里。你一边做，一边要说出你的理由。
3. 征求小组其他成员的意见，看看他们是否同意你的理由。如果他们同意，你可以把卡片放在那个组里； 如果他们不同意，你要收回那张卡片。
4. 从工作管理员开始轮流。工作管理员要保证每个组员都有机会讲话，也要保证其他组员都在听。
5. 直到小组每个成员都没有了卡片，游戏结束。



每组推出一个代表向大家报告他们的科技产品。跟全班同学讨论下列问题：

- 这个东西是天然的还是人造的？
- 这个东西是用哪些材料做成的？
- 它解决了哪些问题？
- 它还可以用来作什么？
- 它还可以用其他哪些材料来制造？

技术 ? 工程师

谁是工程师？

1. 面包师 
2. 建筑工人 
3. 计算机维修员 

4. 水管工人 

5. 汽车修理工 

6. 建筑师 

7. 航空工程师 

8. 医检师 

9. 手工艺术家 

10. 裁缝 

11. 陶瓷艺术家 

12. 生物工程师 

角色	任务
中文督察员	• 鼓励大家只说中文。 • 根据小组成员的意见，圈出熟悉的字或偏旁部首。 • 帮助小组成员使用正确的字词和短语。
材料管理员	• 领取MMIC 1-4：《谁是工程师》并发给小组成员。 • 汇报小组的答案：哪些人是工程师和哪些人不是。
记录员	• 把小组的答案写在MMIC 1-4：《谁是工程师》上。
工作管理员	• 确保小组成员把握好时间并完成任务。 • 引导小组成员观察图片#1-12。
演示质检员	• 使用MMIC 1-4：《谁是工程师》上的字词和短语汇报小组选择答案的原因。

谁是工程师？

说明：以小组为单位，看图回答问题。白板上有12副图片。按照白板上的顺序，每个工作人员的名称被写在以下的表格里。圈出所有熟悉的字或偏旁，然后决定哪些图片中的人可能是工程师。根据你们小组的判断，写出“是工程师”或“不是工程师”，而且用几个字写出你们的理由。

1. 面包师	2. 建筑工人	3. 计算机维修员	4. 水管工人
5. 汽车修理工	6. 建筑师	7. 航空工程师	8. 医检师
9. 手工艺术家	10. 裁缝	11. 陶瓷艺术家	12. 生物工程师

谁是工程师？

说明：以小组为单位，看图回答问题。白板上有12副图片。按照白板上的顺序，每个工作人员的名称被写在以下的表格里。圈出所有熟悉的字或偏旁，然后决定哪些图片中的人可能是工程师。根据你们小组的判断，写出“是工程师”或“不是工程师”，而且用几个字写出你们的理由。

1. 面包师	2. 建筑工人	3. 计算机维修员	4. 水管工人
5. 汽车修理工	6. 建筑师	7. 航空工程师	8. 医检师
9. 手工艺术家	10. 裁缝	11. 陶瓷艺术家	12. 生物工程师

谁是工程师？

1. 面包师
2. 建筑工人
3. 计算机维修员
4. 水管工人
5. 汽车修理工
6. 建筑师
7. 航空工程师
8. 医检师
9. 手工艺术家
10. 裁缝
11. 陶瓷艺术家
12. 生物工程师

工匠

技工

工程师

1. 修理飞机。
2. 设计新一代牙刷。
3. 操作X光仪器。
4. 建造房屋和商店。
5. 设计新型轮椅。
6. 制作鞋子。

工匠的工作是……

技工的工作是……

工程师的工作是……