

UNIT 8

DIY: Do It Yourself



The LifeTrac IV open-source tractor by Open Source Ecology, 2012. Open Source Ecology was founded by TED speaker Marcin Jakubowski. It is a network of farmers, engineers, architects, and supporters that uses open-source technology to allow for the construction of different industrial machines to build a civilization with modern-day comforts.

THINK AND DISCUSS

- 1 Read the unit title. Have you ever heard the expression “Do It Yourself” or “DIY”? What types of projects are typically “DIY”?
- 2 Look at the photo and read the caption. How do you think Open Source Ecology relates to the unit title? Explain.

PART 1

The Psychology behind DIY

Listening

Understand Content-Rich Material

Speaking

Explain a Process

Pronunciation

Intonation in Lists

PART 2

TED TALKS

Marcin Jakubowski

Open-sourced blueprints for civilization

Note Taking

Record Information from Lists

PUT IT TOGETHER

Communicate

Present and Explain a Process

Presentation Skill


Organize Information in a Logical Sequence

PART 1 The Psychology behind DIY

BEFORE YOU LISTEN


A COMMUNICATE Work in a small group. Discuss these questions.

1. Look at the photo. What are the people doing? How do you think they feel?
2. Why do you think some people like to do DIY projects, such as remodeling a house, rather than hiring someone to do it for them?
3. Why do you think some people like to make things for themselves—for example, knitting a sweater or building a piece of furniture—rather than buying them?
4. Do you like to make or build things yourself? If yes, what kinds of things? If not, why not?

B  **2.31 THINK CRITICALLY Predict.** Think about the title of the lecture and listen to the first section. In a group, make a list of questions in your notebook that you think the lecture will answer.



VOCABULARY

C  **2.32** Read and listen to the sentences with words from the lecture. Choose the correct meaning or explanation of each bold word.

1. The table I bought was cheap, but I had to **assemble** it myself. The instructions were terrible. It took me hours!
a. build b. deliver c. put together
2. Many business people saw the **potential** for making money with DIY products, so they started to develop products that people could make themselves.
a. certainty b. difficulty c. possibility
3. Despite the slow economy, the sales of our DIY projects have been very good this month. We hope to **maintain** or even increase sales next month.
a. improve a little b. keep at the same rate c. slow down
4. Some **consumers** buy furniture that they need to put together themselves because it's cheaper. A **consumer** is someone who _____.
a. buys things b. makes things c. wants to save money
5. More and more businesses are beginning to reduce their dependence on oil because it is not a **sustainable** source of energy. Instead, they are beginning to invest in forms of energy that will always be available, such as wind and solar.
a. able to continue to exist and grow b. acceptable to everyone c. easy and ready to use
6. My brother likes to do projects in his free time. I've never seen him sit down and just watch television. He doesn't like to be **idle**. Someone who is **idle** doesn't _____.
a. feel alone b. have work to do c. like to relax
7. The researchers are looking for people to be in their study. **Participants** have to be over the age of 21. A **participant** is someone who _____.
a. is 22 or older b. takes part in a research study c. works in a research lab
8. There are two **versions** of the instructions. One is in English, and the other is in Spanish. A **version** is _____.
a. a piece of paper with information on how to do something
b. a different type of explanation
c. a form of something that differs from other forms of the same thing
9. I bought a beautiful old table from someone on the Internet for \$100. I took it to an antique dealer and he **valued** it at \$1,000. Do you think I should keep it?
a. bought b. put a price on c. tried to sell
10. Think about the business **implications** of the results of the study. Do you think that business owners will change anything based on the research?
a. extreme difficulties b. possible effects c. special reasons


D COMMUNICATE Work with a partner. Read and answer these questions. Use the bold words in your answers.

- 1. Do you think most people **value** something more if they make it themselves or buy it? For example, think of a sweater that someone knits for a relative or a piece of furniture that you build by yourself. Explain your answer.
- 2. How important is it to you to have the latest **version** of a cell phone or computer program? Explain your answer.
- 3. What are some ways for a popular restaurant to **maintain** its popularity?
- 4. What is the best way for governments to encourage businesses to invest in **sustainable** energy, such as wind and solar power?
- 5. As a **consumer**, what are the things that influence you the most? Price? Popularity of the product? Advertising? Something else? Explain your answers with specific examples of products you have bought.

LISTEN



LISTENING SKILL Understand Content-Rich Material

Lectures are often content-rich; that is, they include a lot of information. When listening to content-rich material, you might feel overwhelmed. You might get stuck on an unfamiliar word or idea and stop listening in order to figure it out. Keep listening; you often need to hear what comes *next* in order to understand what you just listened to.

 **2.33** Read and listen to the example from the lecture you are going to listen to.

Now for the second study, which involved origami. Origami is the Japanese art of folding paper into different shapes, often of animals, such as birds, fish, or insects.

Notice how the speaker defines origami right after she mentions it.


E  **2.34**  **1.38** **LISTEN FOR MAIN IDEAS** Listen to the lecture. It is divided into two segments. Each segment describes a different experiment. There will be a pause of about one minute before you hear the experiment results. Work with a partner to predict what the results will be. Then listen to the results and check your answers.

Experiment 1

- 1. What do you think most people in Group 1 did? Why do you think so?
- 2. What do you think most people in Group 2 did? Why do you think so?


Experiment 2

- 3. Which frogs do you think the participants valued more: their own or the expert-made ones? Why do you think so?
- 4. Which frogs do you think the people who were not involved in the experiment valued more: the participants' or the expert-made ones? Why do you think so?

F  **2.35** **LISTEN FOR DETAILS** Read the steps from the first experiment. Then listen and put them in the correct order. Write *1* next to the first step, *2* next to the second step, and so on.

- a. _____ They put each participant in a separate room with a bracelet in it, and they did not let the participants take anything into the room with them.
- b. _____ They gave each participant a choice. They could take the bracelet apart and put it back together, or they could do nothing.
- c. _____ They told the participants to stay in the room for 15 minutes.
- d. _____ The researchers divided the participants into two groups.
- e. _____ They gave half of the participants instructions on how to take the bracelet apart and create a new design.
- f. _____ They told the participants in Group 1 that if they took the bracelet apart, they had to put it back together in exactly the same way.
- g. _____ They left the participants alone for 15 minutes.
- h. _____ They gave each group a different version of the instructions.



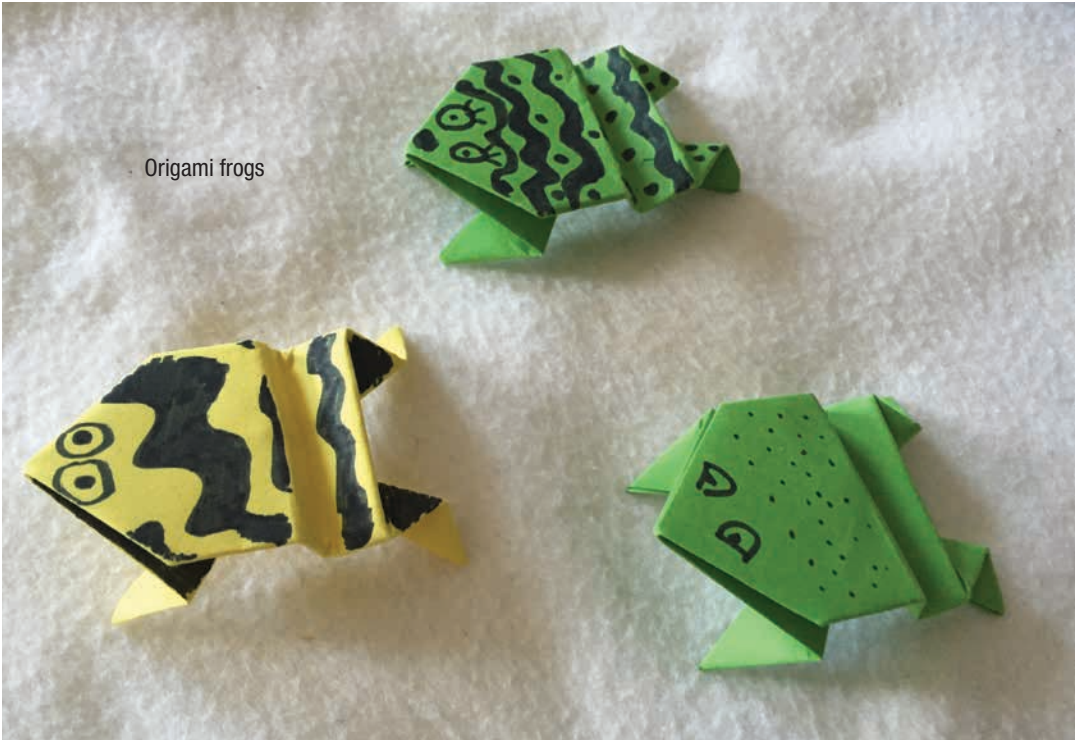
G  **2.36 LISTEN FOR DETAILS** Read the steps from the second experiment. Then listen and put them in the correct order. Write 1 next to the first step, 2 next to the second step, and so on.

- a. _____ Participants valued their own origami frogs.
- b. _____ Participants with no experience making origami followed instructions to make origami frogs.
- c. _____ People not involved in making the frogs valued the participant-made and expert-made origami frogs.
- d. _____ Participants valued expert-made origami frogs.

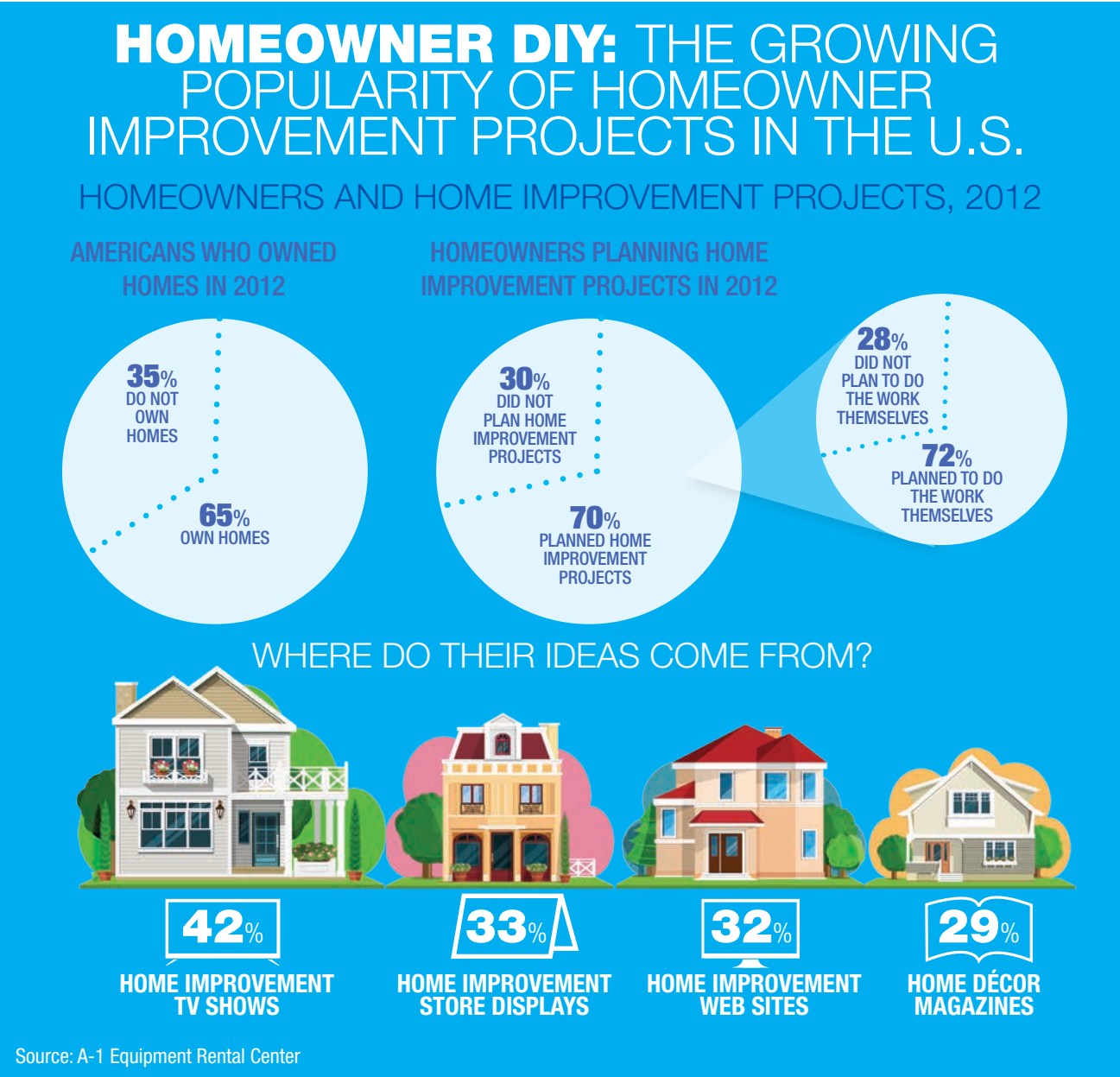
AFTER YOU LISTEN

H COMMUNICATE Work in a small group. Discuss the answers to these questions.

- 1. Did anything in the lecture surprise you? Explain what and why.
- 2. Do you agree with the hypotheses of the first experiment: Most people prefer being busy to being idle, but they need a reason to be busy? Explain your answers with specific examples from your personal experience.
- 3. Why do you think the participants in the second experiment valued their origami frogs so highly? Have you ever had an experience that supports or contradicts what the researchers found? Explain it to your group.



I THINK CRITICALLY Interpret an Infographic. Work in a small group. Look at the infographic and answer the questions below.



- 1. What is the most popular source for DIY home improvement ideas? Why do you think it is the most popular source?
- 2. Were you surprised at the high percentage of people who said they planned on doing their own home improvement projects? Why, or why not?
- 3. What percentage do you think actually completed the projects? Explain your answer.
- 4. If this survey were done in your country, how do you think the percentages would compare? Would they be similar? Higher? Lower? If you think there would be differences, what might some of the reasons for those differences be?
- 5. Do you think the information in the lecture is enough to explain the popularity of home improvement DIY in the U.S.? If not, what might some other explanations be?

SPEAKING

SPEAKING SKILL Explain a Process

When you explain a process – how to do something – you can use signal words and phrases to signal steps in the process. Here are some examples:

First, Second, Third, Then, Next, Finally,
After (that / 15 minutes), Before (that / the experiment),

2.37 Read and listen to the examples:

How something happened:

First, the researchers divided the participants into two groups.
Second, they put each participant in a separate room with a bracelet in it. They didn't let the participants bring anything into the room - no cell phones, books, or paper.

How to do something:

First, divide the participants into two groups.
Second, put each participant in a separate room. Don't let them bring anything into the room.

You can use the past to explain how you did something or the imperative to explain how to do something. BUT, in fact, we often use the simple present to explain how to do something.

You take the... Then, you put the,...

J COLLABORATE Work with a partner. Follow these steps.

Step 1: Look at exercise F on page 147. Add signal words where necessary. You do not need a signal word for every sentence, and sometimes more than one signal word is possible.

Step 2: Look at exercise F on page 147 again. This time, imagine that you are the head researcher for experiment 1 and you are telling your assistant how to conduct the experiment. Take turns explaining the steps of the experiment. Use signal words where necessary.

Example: First, divide the participants into two groups.

Step 3: Close your books. Take turns explaining the steps of the experiment to your partner. Use the imperative, the simple present, and signal words where necessary.

PRONUNCIATION SKILL Intonation in Lists

When speakers list three or more things, they use rising intonation on all of the items in the list except for the final item, where they use either falling intonation or rising and then falling intonation.

2.38 Read and listen to the example.

They didn't let the participants bring anything into the room—no cell phones, books, or paper.

K 2.39 Listen and mark the items in the list with rising (↗) and/or falling (↘) arrows according to the intonation you hear. Use the sentence in the Pronunciation Skill box above as an example.

- 1. There are many Web sites where you can design your own products; for example, T-shirts, sneakers, jeans, or cell-phone cover.
- 2. DIY projects include cooking, gardening, knitting, and sewing.
- 3. There are DIY projects for all age groups: children, teenagers, adults, and the elderly.
- 4. People enjoy making origami of animals, such as birds, fish, and insects.
- 5. Researchers have conducted many experiments to test the effects of idleness on people's mental, emotional, and physical health.

L 2.39 Listen again and check your markings in exercise K. Then practice reading the sentences with a partner. Check your partner's stress and intonation.

M COMMUNICATE Complete each of the sentences with your own ideas. Then say your sentences to a partner. Practice the correct stress and intonation of your lists. Use the same word form for all of the items in your list; for example, use all nouns in 1, all gerunds (-ing form) in 2, etc.

- 1. Some of the reasons I decided to take classes at this program are because of the _____, the _____, and the _____.
- 2. Some good ways to learn and remember new vocabulary are _____, _____, and _____.
- 3. There are a lot of things you can do to practice your English outside of class, for example, _____, _____, and _____.



PART 2 TED TALKS

Open-sourced blueprints for civilization

“ . . . a single burned DVD is effectively a civilization starter kit. ”

BEFORE YOU WATCH

A Read the title, the information about the TED speaker, and the key terms below. Which of the following statements do you think are true about the TED speaker? Discuss your ideas with a partner.

- a. He grew up on a farm.
- b. He has a PhD in physics.
- c. He is concerned about the environment.
- d. He studied software engineering.

MARCIN JAKUBOWSKI Farmer and Technologist

Marcin Jakubowski is the founder of Open Source Ecology, which is creating the Global Village Construction Set—the blueprints for simple construction of everything needed to start a self-sustaining village (starting cost: \$10,000). At Factor e-Farm in rural Missouri, he’s been successfully putting those ideas to the test.

Marcin Jakubowski’s idea worth spreading is that open-source technology can enable human creativity and create more environmentally sustainable methods of production.

Key terms

open-sourced: information that is published on the Internet that others can use or adapt for free. It is available (“open”) to anyone with an Internet connection.

blueprint: a design plan or technical drawing that shows you how to build something, for example, a machine or a house.

self-sustaining village: a small town where everything the community needs to survive (for example, food, shelter, energy) is made right in the village.


a starter kit: a starter kit is something that contains all of the material and instructions you need to start a DIY project.

B COMMUNICATE Work with a partner. Discuss these questions.

1. Why would someone want to set up a self-sustaining village?
2. What kinds of blueprints do you think you would need in order to build a self-sustaining village?
3. What kind of information is the TED speaker making available? Why do you think he is doing it?
4. Look at the quote on page 152. What do you think a “civilization starter kit” might be?

C THINK CRITICALLY Predict. Work with a new partner. Think about and compare your answers from exercise A on page 153. Then discuss what you think the TED speaker is probably going to present in his talk.

VOCABULARY

D  **2.40** The sentences below will help you learn words in the TED Talk. Read and listen to the sentences and guess the meanings of the words in bold. Then write each word or phrase next to its definition on page 155.

- a. When I **set out** to do something, I am usually successful in completing it.
- b. After the earthquake, people whose houses were destroyed had to move. They started a **settlement** just outside of town, close to the river.
- c. The new machines helped increase **productivity** on the farm. They helped the farmers do their work faster and more efficiently.
- d. His ideas are **sound**. He has developed them over years of research.
- e. In some countries, the **distribution** of wealth is quite unequal. For example, one percent of the people might control 99 percent of the wealth.
- f. In today's world, there are many different **means** of communication: email, text messages, telephone, etc.
- g. You can only **transcend** your fear if you understand what you are afraid of and face it directly. By facing your fear, you can often get past it and move on.
- h. When there is a large **supply** of houses and very few buyers, house prices go down. On the other hand, when there is a **scarcity** of houses and a lot of potential buyers, housing prices rise. This is called the law of **supply** and demand.
- i. Using machines rather than human workers, factories are able to make products on a large **scale**. For example, a shoe factory might be able to produce a thousand pairs of shoes a day, while someone making shoes by hand can only work on a small **scale**, making two pairs a day.




A shoemaker works in his shop,
Alexandra, Egypt.

1. _____ (phrasal v) begin an action or plan
2. _____ (n) a quantity of products
3. _____ (n) a very small or limited amount of something
4. _____ (n) a new area where a group of people has decided to live
5. _____ (n) the relationship between how many quality products and services each worker or industry can produce in a given amount of time
6. _____ (n) in a big or small way
7. _____ (n) methods or ways
8. _____ (n) spread or placement over an area
9. _____ (adj) logical; supported by evidence
10. _____ (v) overcome; go past the limitations

E COMMUNICATE Read the statements. Are they true or false for you? Write T for *true* or F for *false* for each statement. Then explain your answers to a partner.

1. _____ When I **set out** to do something, I sometimes get distracted and don't finish what I started.
2. _____ The **productivity** of workers in my country is high, compared to other countries.
3. _____ The **distribution** of wealth in my country is very unequal.
4. _____ One day, human beings will be able to **transcend** their differences and live in peace.
5. _____ One of the biggest problems facing humanity is the **scarcity** of water.
6. _____ I think it would be exciting to live in a small **settlement** far away from a big city.

WATCH

F  **1.39** **WATCH FOR MAIN IDEAS** Watch the TED Talk. Check [✓] the three phrases that express what Jakubowski is trying to achieve. Then compare your answers with a partner's. If you did not check a statement, explain why.

1. _____ teach people how to live without modern technology
2. _____ help people live in a way that does not hurt the environment
3. _____ sell machines to the public that are easy to fix and last a long time
4. _____ teach people how to achieve high productivity in a small business environment
5. _____ help people become more self-reliant and less dependent on large industry and corporations

learnmore These days, many Americans are involved in activities to help the environment. One popular activity is to join a CSA. CSA stands for Community-Supported Agriculture. If you are a member of a CSA, you pay to have a local farm deliver fresh fruits and vegetables to you every month.



NOTE-TAKING SKILL Record Information from Lists

When you are taking notes, listen for the speaker’s intonation as he or she lists items. If the list is long, write down as much as you can. Often, even writing one item in the list will help you understand the speaker’s point. Later you may remember other items from the list and you can add them to your notes.

Read the example and look at the notes.

If we can lower the barriers to farming, building, manufacturing, then we can unleash just massive amounts of human potential.

Notes during talk: lower barriers to farming, bldg., _____ → use more human potential

Notes after talk: lower barriers to farming, bldg., mfg → use more human potential

G ▶ **1.40** **WATCH FOR DETAILS** Watch the segments from the TED Talk and take notes to answer the questions. Concentrate on writing down as many items in the lists as you can catch. You will see each segment two times.

Segment 1: What is Jakubowski’s background?

What were some of the most important machines that Jakubowski needed?

Segment 2: What were the characteristics of the machines and tools he needed?

Segment 3: What information has he published on his wiki?

Segment 4: What are the barriers that he wants to lower?

Segment 5: Who does this work help, and what does it help them to do?

H COMMUNICATE Work with a partner. Compare your notes from exercise G. Add items to your lists if possible.

I ▶ **1.41** Read the questions and answer choices. Use your notes from exercise G to help you choose the correct answer to each question. Then watch the segments from the TED Talk and check your answers.

Segment 1

1. How will Jakubowski’s idea allow people to save money?
- a. Using his free designs and instructions, they can build their own machines.
 - b. They can use his Web site to design machines that he will build for them.

Segment 2

2. What did Jakubowski discover when he tried to set up his own environmentally sustainable farming community?
- a. He was able to build his own tools and machines, but they broke too easily, were difficult to repair, and his productivity was too low.
 - b. The tools and machines he needed were too expensive to buy, broke too easily, and were too difficult or even impossible to fix.

Segment 3

3. What did Jakubowski do to solve the problem?
- a. He proved that he could achieve industrial productivity on a small scale and got people from all over the world to invest money in his project.
 - b. He built tools and machines that allowed him to achieve high productivity and then made his designs available to others on the Internet.

J COMMUNICATE Work with a partner. Compare your answers from exercise I.

K ▶ **1.42** **EXPAND YOUR VOCABULARY** Watch the excerpts from the TED Talk. Guess the meanings of the phrases in the box.

at a fraction of the cost be broke show up unleash supply chain

WORDS IN THE TALK

the grid (n): the electrical power system managed by large utility companies
prototype (n): working model of a machine or other object used to test it before producing the final version
repository (n): a place to store objects or information where they can be easily accessed
wiki(n.): a Web site that allows users to change or add things on it



A farmer driving a bulldozer

AFTER YOU WATCH

L THINK CRITICALLY Evaluate. Work with a partner. Imagine that you are starting a settlement. Which machines would you need most? Look at the descriptions of some of the machines that are included on the Open Source Ecology Web site. Then choose five of the machines.

1. *a microhouse*: a small, energy efficient, low-cost house for two people
2. *a 50kW wind turbine*: a machine that produces electricity from wind energy
3. *an open-source truck*: a vehicle used to transport large amounts of material
4. *a universal seeder*: a machine that can plant seeds for crops, such as wheat or potatoes
5. *a dairy milker*: a device that gets the milk from cows and goats
6. *a bulldozer*: a large machine that can clear land
7. *a backhoe*: a large machine that can dig large, deep holes in the ground
8. *an ironworker*: a machine that cuts steel and makes holes in it
9. *a tractor*: a large powerful machine used for construction and farm work
10. *a well-digging rig*: a machine that digs wells for water
11. *a cement mixer*: a machine that mixes the ingredients that make cement
12. *a bakery oven*: an oven used for baking bread

M THINK CRITICALLY Compare. Form a group with another pair of students. Compare and explain your choices from exercise L.

N COMMUNICATE Work with a partner. Discuss these questions.

1. Jakubowski mentions that participants from all over the world have traveled to his farm to help him develop the Global Village Construction Set. Would you like to visit Jakubowski's farm and meet him? Would you like to be involved in his project? Why, or why not?
2. Do you think Jakubowski will achieve his goal of completing the Global Village Construction Set? Why, or why not?

Put It Together

A THINK CRITICALLY Synthesize. Work in a small group. Consider the lecture from Part 1, *The Psychology Behind DIY*, the TED Talk from Part 2, and your own experience as you discuss these questions.

1. What motivates people to do or make things themselves, rather than hiring someone else or buying something? Think of as many motivations as you can.
2. Now think about what benefits people receive from doing or making things themselves.

COMMUNICATE

ASSIGNMENT Present and Explain a Process You will present and explain a process to a partner. Review the ideas in Parts 1 and 2, and the listening and speaking skills as you prepare for your presentation.

PREPARE

PRESENTATION SKILL Organize Information in a Logical Sequence

If you organize your ideas and information well, you can say a lot in a short amount of time. Marcin Jakubowski's TED Talk is only four minutes long, yet he manages to explain a complex process. Here are some guidelines for organizing a process into a logical sequence.

- Break the process down into a series of short, individual steps. If a step is long, break it down into two or more shorter steps.
- Use simple language to describe each step.
- If you need to explain why a step is necessary, do so before you introduce the step.
- If you need to explain the result or effect of a step, do so immediately after you explain the step.
- Use signal words, such as the ones from the Speaking Skill box on page 150, to signal that you have finished one step and are moving on to the next one.

B ▶ **1.43** Read the sentences from the TED Talk that explain the steps in a process. Then watch the segment and put the steps in order. Write *1* next to the first step of the process, *2* next to the second step, and so on.

- a. _____ *And I found that industrial productivity can be achieved on a small scale.*
- b. _____ *And now the project is beginning to grow on its own.*
- c. _____ *... prototyping new machines during dedicated project visits.*
- d. _____ *I found that I would have to build them (the machines) myself.*
- e. _____ *Then contributors from all over the world began showing up.*
- f. _____ *So I did just that.*
- g. _____ *So then I published the 3D designs, schematics, instructional videos, and budgets on a wiki.*
- h. _____ *And I tested them.*
- i. _____ *So far, we have prototyped eight of the fifty machines.*

C Choose a process to present to a classmate. You can use one of the suggestions below, or you can think of your own idea.

- How to build, make, or fix something
- How to plant a garden
- How to play a game
- How to use a computer program or mobile application
- Your own idea: _____



D Prepare for your presentation. Follow these steps.

1. Break the process down into small steps.
2. Put key words for each step on one note card. Write a signal word in front of each new step.
3. Put the steps in a logical order. Write a number on each note card.

PRESENT

E Read the rubric on page 182. Notice how your presentation will be evaluated. Keep these categories in mind as you present and watch your classmate’s presentation.

F Give your presentation to a partner. After your partner finishes evaluating you, your partner presents and you assess him or her. Add notes or feedback to share. Use the rubric as a guide. Add notes or any other feedback you want to share.

G THINK CRITICALLY Evaluate. With your partner, discuss the feedback you received. Discuss what you did well and what might make your presentation even stronger.

REFLECT

Reflect on what you have learned. Check [✓] your progress.

I can	<input type="checkbox"/> understand content-rich material.		
	<input type="checkbox"/> explain a process.		
	<input type="checkbox"/> use rising and falling intonation in lists.		
	<input type="checkbox"/> record information that is given in lists.		
	<input type="checkbox"/> organize information in a logical sequence.		
	<input type="checkbox"/> present and explain a process.		
I understand the meanings of these words and can use them.			
Circle those you know. Underline those you need to work on.			
assemble AWL	maintain AWL	scale	supply
consumer AWL	means	scarcity	sustainable AWL
distribution AWL	participant AWL	set out	transcend
idle	potential AWL	settlement	value
implication AWL	productivity	sound	version AWL