



IGNITE MY FUTURE

LESSON TITLE

Speak My Language

Guiding Question: What will our future look like?

SUBJECTS

English
Language Arts

COMPUTATIONAL THINKING PRACTICE

Communicating About
Computing

COMPUTATIONAL THINKING STRATEGY

Collect Data, Find Patterns

MATERIALS

Computers with Internet access

*Note: Activities may be modified to use pen and paper if computers are not accessible

Access to a smartphone or tablet that can download applications

[Travel Scenarios](#) student capture sheet

[Language Learning Patterns](#) student capture sheet

Language phrasebooks, guides, dictionaries and/or textbooks

Ignite Curiosity

- How long does it take to learn a language?
- What are some words or phrases that are essential to basic communication?
- Can technology speed up the process of learning a new language?
- How can learning a new language help people feel like part of a global community?
- Can the ability to communicate across different languages increase global goodwill in the future?

In this lesson, students will discover how thinking like a computer can speed up the process of learning a new language. In **THINK**, students step into the role of a tour guide charged with preparing a group to travel to a foreign country. The trip is in just a few weeks, but the group doesn't know the language spoken in that country. In **SOLVE**, students use the computational thinking strategy of finding patterns to design a tool that could help someone learn the basics of a language quickly. In **CREATE**, students will develop a flash card game that helps travelers to learn a language quickly. They will use the computational thinking strategy of collecting data and store their language-learning shortcuts in a retrievable database. In **CONNECT**, students identify how learning languages connects to careers and to the problems of tomorrow. They also explore how learning new languages could increase global goodwill in the future.

Students will be able to:

- **Evaluate** the problem of learning the basics of language quickly, and
- **Apply** the computational thinking strategies of finding patterns and collecting data in order to
- **Create** a computational artifact that can help someone communicate the basics of a language in a short amount of time.



Students will step into the role of tour guides charged with preparing a group to travel to a foreign country in a few weeks. The group doesn't know the language spoken in that country and needs to learn the basics of that language quickly.

1 Read the following scenario to students:

Imagine that you are a tour guide who will be leading a trip to another country. Most natives of that country do not speak English, so it is important that the travelers in your group know the basics of that country's language. There's just one problem—the trip is in a few weeks! It's up to you to teach your tour to communicate in this language in a very short amount of time. How can you use the computational thinking strategies of collecting data and finding patterns to solve this problem and make sure the travelers have a great experience?

2 Lead students to consider some of the things a traveler to a foreign country might need to know. These include:

- What are some of the first things a traveler needs to know when they arrive in the new country? (Where can I find transportation? Where is the hotel? Where is a bathroom? Where can I get food?)
- What are some things about the new country that a traveler should know? (Are there special customs that I need to know about? What time do the shops or restaurants close? Is there a dress code for men or women?)
- What things will your group need to know to enjoy their vacation? (How much is my money worth? Where is a bank or an ATM? Where can I charge my smartphone? Where is the beach? Where is the ski lift? Where can I go shopping for clothes? What souvenirs can I take on the plane?)
- What things will your group need to know in case of an emergency? (Is there help for travelers, such as a U.S. embassy? Where can I buy a toothbrush or basic medical supplies such as cough syrup or bandages? How do I find a doctor or hospital? How do I contact the police?)

3 Have students create their own examples of travel scenarios and record them in the [Travel Scenarios](#) student capture sheet. When they have finished, regroup as a class and discuss student responses.



Students use the computational thinking strategy of finding patterns to design a tool that could help someone learn the basics of a language quickly. They will explore different language learning tools to identify common elements of program structure that are common to many languages and applications.

- 1 Divide** students into groups. Distribute the [Language Learning Patterns](#) student capture sheet. If you are using computers, ensure that each student group has at least one computer.
- 2 Explain** to students that they will be exploring different language-learning tools. Remind students that they are not required to complete the learning modules in the tools. Instead, as they browse the tools, they should identify patterns and record data about the tools in their capture sheet. Provide students with 20 to 30 minutes to review the tools and record their findings:
 - Open-Access Online Courses:
 - [Carnegie Mellon’s Open Learning Initiative: Elementary French 1](#)
 - [University of Texas at Austin’s Francais Interactif](#)
 - [Bowdoin’s Spanish Grammar Book](#)
 - Apps:
 - [Duolingo](#)
 - [Babbel](#)
 - [Tandem](#)
 - Print Materials:
 - Textbooks
 - Dictionaries
 - Phrasebooks/guides
 - Videos:
 - [BBC’s languages](#)
 - [Yabla](#)
 - [FluentU](#)
- 3 When most groups have completed** the capture sheet, lead a class discussion that encourages students to share their findings. Ask students the following questions and record their answers in a central location:
 - What patterns did you find in the tools?
 - Did some words and/or phrases appear over and over, even though the tools were teaching different languages? Why do you think that is?
 - Do you think that some tools are better than others for learning a language quickly? Why or why not?
 - What are the computational thinking strategies of collecting data and finding patterns useful in helping us solve this problem?
- 4 Ask** students to think of different tricks or tools they have used in the past to learn things quickly. Write their answers in a central location. Answers might include the following:
 - Memorization
 - Studying
 - Watching a video
 - Playing games
 - Drawing
 - Following along with a tutorial
 - Making flash cards
 - Using mnemonic devices
 - Creating rhymes or songs
 - Listening to a recording
- 6 Have students rank** the learning tools in order of effectiveness. Note that every person learns differently but there are some tools, such as games, that have been scientifically proven to help people learn faster.

Find more easy-to-implement resources to integrate computational thinking practices into your classroom by visiting ignitemyfutureinschool.org



- 1 Divide** students into pairs. Each pair should have access to a computer.
- 2 Read** students the following scenario:
In a pre-trip meeting with your tour group, you have asked the travelers to indicate their preferred method for developing a comfort level with the language quickly. After taking a vote, the group decides that they would learn best by playing a game with virtual flashcards. Using what you know about the important phrases the travelers will need and language-learning strategies, create a flashcard game that will quickly teach key words and phrases.
- 3 Instruct** students to use the website [Quizlet](#) to make a flashcard game that meets the following criteria:
**Note: you can use paper flashcards if you do not have access to computers.*
 - Uses different learning strategies from the [Language Learning Patterns](#) capture sheet
 - Includes between 10 and 20 flashcards
 - The Quizlet must translate words and phrases from English into any language the students choose (students can use [Google Translate](#) to find words and phrases)
 - Address at least 10 of the travel scenarios listed on the [Travel Scenarios](#) capture sheet
- 4 Provide** students with 20 to 30 minutes to create their Quizlet.
- 5 When the students have finished** their Quizlets, have them present their work to the class. Note the similarities and differences between the quizzes, identifying how many phrases and words repeat across quizzes even though they do not focus on the same language.
- 6 Lead** students in a discussion about the role of computers in helping to create a global community. Ask the following critical thinking questions:
 - How can smartphones and computers help us communicate with people who do not speak our language?
 - How do computers and smartphones change the language we use every day (emojis, texts, abbreviations, etc.) Is this good or bad?
 - Why is it important to learn new languages in the age of apps and smartphones?
 - How does the ability to communicate in the same language as another person impact our relationship with that person?
 - How could you modify your language-learning game for a learner who cannot communicate verbally?



Select one of the strategies listed below to help students answer these questions:

- How do this problem and solution connect to me?
- How do this problem and solution connect to real-world careers?
- How do this problem and solution connect to our world?

- 1 Write** the three questions on PowerPoint or flip chart slides, and invite students to share out responses.
- 2 Display** pieces of chart paper around the room, each with one question written on it. Ask students to write down their ideas related to the questions on each sheet.
- 3 Assign** one of the questions to three different student groups to brainstorm or research and then share out responses.
- 4 Invite** students to write down responses to each question on a sticky note, and collect them to create an affinity diagram of ideas.

How does this connect to students?

Some students may have been exposed to other languages in their homes or may have had the opportunity to travel to other countries. Most students will probably have experienced someone else speaking a language that they do not know, such as in a store, in a video, or in a movie. They may have had the experience of trying to communicate technology to an older person.

We all must learn to communicate with those around us, whether it is teaching an older person to use technology or traveling to another country. Learning a language fluently may take many years, but learning a few words or phrases is a good place to start.

How does this connect to careers?

Statisticians use statistical methods to collect and analyze data and to help solve real-world problems in business, engineering, health care and other fields.

Anthropologists study the origin, development, and behavior of humans. They examine the cultures, languages, archeological remains, and physical characteristics of people in various parts of the world.

Software Developers are the creative minds behind computer programs. Some develop the applications that allow people to do specific tasks on a computer or another device. Others develop the underlying systems that run the devices or that control networks.

Translators and Interpreters convert information from one language into another language. Interpreters work in spoken or sign language and translators work in written language.

How does this connect to our world?

Technology helps us communicate with others around the world. It is important to realize that many different cultures are needed to make the world an engaging and interesting place. The language we speak is only one aspect of our culture, but it is a very important part.

To help us connect with one another, we can learn new languages. In the scenario given in the lesson, learning a new language would be helpful for a good traveling experience. In the context of careers, learning a new language is a highly marketable skill. Large companies often have offices in many locations around the world, and employees must collaborate to meet company goals. Medical and scientific research teams routinely work together in many different countries, with some members speaking several different languages.

Language and speech dictation technology is rapidly evolving. Individuals with autism, cerebral palsy, or other conditions that correlate to aphasia (difficulty in understanding or producing language) can now use computational tools to assist with verbal communication.

National Standards

COMMON CORE STATE STANDARDS CONNECTIONS

ELA/Literacy

- **RST.11-12.9:** Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

Mathematics:

- **MP.2:** Reason abstractly and quantitatively.

K-12 COMPUTER SCIENCE FRAMEWORK

Practice 7. Communicating About Computing

- Communication involves personal expression and exchanging ideas with others. In computer science, students communicate with diverse audiences about the use and effects of computation and the appropriateness of computational choices. Students write clear comments, document their work, and communicate their ideas through multiple forms of media. Clear communication includes using precise language and carefully considering possible audiences.

Travel Scenarios

Fill in the chart as you answer these questions with your group:

<p>What are some of the first things that your group will need to know when they arrive in the new country?</p>	<p>What are some things about the new country that a traveler should know?</p>	<p>What are things your group will need to know to enjoy their vacation?</p>	<p>What are things your group will need to know in case of an emergency?</p>

Language Learning Patterns

As you browse the language-learning tools, record data using the table below. Each column on the sheet asks a question about the tool. Put a "Y" or "Yes" in the box if the tool does what is asked in the question. Put an "N" or "No" in the box if the tool does not do what is asked in the question. When you have completed the sheet, highlight any patterns that you find.

Tool	CMU Elem. French 1	Francais Interactif	Spanish Grammar Book	Duo-lingo	Babbel	Tandem	Text-book(s)	Dictionary	Guide-book	BBC's Languages	Yabla	FluentU
Does the tool use videos?												
Does the tool use scenarios?												
Does the tool utilize native speakers?												
Does the tool have the learner speak?												
Does the tool have the learner write?												
Does the tool use games?												
Does the tool teach vocabulary?												
Does the tool teach parts of speech?												
Does the tool use tests or quizzes?												
Does the tool provide cultural context?												
Does the tool include information about body language or gestures?												
Would this tool help a traveler who needs on-the spot language help?												