

LESSON 13

Translate

60 minutes

Digital Creation Lab

WHAT THIS LESSON DOES

In this engaging lesson, you'll learn to build a language translator using Scratch. Follow step-by-step instructions to translate text into various languages and make a sprite speak the translations aloud. Start coding and explore new languages today!

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand how to use Scratch to translate text into different languages.
- Develop skills in creating and managing a new project in Scratch.
- Learn to use the Translate and Text to Speech extensions in Scratch.
- Gain experience in creating and using variables in Scratch.
- Apply knowledge to add more languages to the translation project.

BEFORE THE LESSON

- Open <https://scratch.mit.edu/> on a pupil device and confirm the school filter allows it.
- Check that device sound works: Text to Speech needs speakers or headphones.
- Have the Irish and French flag image files from this lesson ready for pupils to download and upload as sprites.
- Decide devices per pupil or per pair and that pupils can create or open a Scratch project.

Translate

HOW THE LESSON RUNS

Introduction

Create a new project

Add the Translate extension

Add the Text to Speech extension

Add the Kai sprite

Create 2 variables

Upload the Irish flag as a sprite

Translate to Irish

Do the translation

Speak the translation

Translate to French

Add more languages

Wrap up

TEACHING MOVES

- 1. Introduction. Frame the goal in one line: build a sprite that asks for text, translates it, and speaks the result. Keep it brief before they open Scratch.
- 2. Create a new project. Get everyone to scratch.mit.edu and a blank project. Confirm they can delete the cat so the stage is clear for Kai and the flags.
- 3. Add the Translate extension. Show the Extensions button bottom left once on the board. Wait until every project shows the Translate blocks before moving on.
- 4. Add the Text to Speech extension. Have them add Text to Speech the same way. Check that both extension palettes are visible in the toolbox.
- 5. Add the Kai sprite. Add Kai from the library. Snap the green-flag go-to centre blocks, then run the flag so everyone sees Kai in the middle.
- 6. Create 2 variables. Create language and translation as for-all-sprites variables. Uncheck both so they stay off the stage and do not clutter the flags.
- 7. Upload the Irish flag as a sprite. Guide download, upload as sprite, then size 40% and top-left position. Green flag should place the Irish flag cleanly.
- 8. Translate to Irish. On the Irish flag: when clicked, set language to Irish and broadcast do translation. Stress the exact spelling of Irish and the message name.
- 9. Do the translation. On Kai, when do translation is received: ask, set translation from the Translate block using answer and language, then say it. Test with a short phrase.
- 10. Speak the translation. On the same Kai receive stack, add set language (TTS) to the language variable, then speak translation. Retest so pupils hear the Irish output.
- 11. Translate to French. Repeat the flag pattern for French: upload, place top middle at 30%, set language to French, broadcast do translation. No change needed on Kai.
- 12. Add more languages. Point at the Scratch language list. Pupils pick further flags and copy the click pattern with the matching language name. Circulate for spelling mismatches.
- 13. Wrap up. Ask two spoken questions only: which language worked best, and what broke when a flag did not work. Do not collect written answers.

WHAT TO WATCH FOR

- Pupils type a language name that does not match what Scratch expects (spelling, spacing, or a name not on the list), so Translate fails or does nothing useful. Have them copy the language string from the lesson list into the set-language block and retest with the same short phrase.
- They add ask, translate, say, or speak on the flag sprite, or forget broadcast, so Kai never runs the translation stack. Say aloud: flags only set language and broadcast; Kai alone receives do translation and does the ask, translate, and speak work.
- Text to Speech is missing, muted, or the TTS language block is left on the wrong language, so they see the translation but hear nothing or hear the wrong voice. Check the extension is added, device sound is on, and set language (TTS) uses the language variable before speak.

DIFFERENTIATION

- Emerging: Pair them with a partner and complete Irish only: one flag, Kai ask-translate-say, then add speak once that path works. Sit with them to add both extensions and the two variables, then let them drive the Irish flag blocks.
- Developing: Have them explain the path flag click to broadcast to Kai before they build French. If French works, ask them to fix one broken language name on purpose and repair it.
- Proficient: Challenge them to add two more list languages with correct flags, positions, and language strings. Ask them to try a full sentence and compare say versus speak for the same translation.