



**Science and Technology**  
**Citizen-Scientists Take Control of**  
**Old Satellite**

Lesson Plan  
*by Jill Robbins, Ph.D.*

Level: Intermediate

# Introduction

This lesson plan is to accompany the VOA Learning English **Science and Technology** story, [Citizen-Scientists Take Control of Old Satellite](#)

Depending on the length of the class period, this lesson may cover more than one session. The approach used in this lesson is based on the CALLA approach. See the end of the lesson for more information and resources on teaching with the CALLA approach.

# Lesson Elements

**Prepare**

**Present**

**Practice**

**Self-Evaluate**

**Expand**

# Prepare

Find out how much students know about the National Aeronautics and Space Administration (NASA) and the existence of old, unused satellites by asking questions such as:

- *What does NASA do?*
- *What is a satellite?*
- *Do all satellites come back to earth?*

Show the photo to introduce the ISEE-3. Then, make sure they know the key vocabulary words from this story.

# The International Sun Earth Explorer 3



This photo shows the spacecraft before it was launched in 1978 .

# Vocabulary

**satellite** – *n.* a small object in space that moves around a larger object; an object placed in orbit around the earth

**block** – *v.* to stop something from being done; to prevent movement

**leader/lead** – *v.* to show the way; to command; to control; to go first

**control** – *v.* to direct; to have power over

**goal** – *n.* that toward which an effort is directed; that which is aimed at; the end of a trip or race

**design** – *v.* to plan or create plans for

# Present

Explain “Today we’re going to **create a graphic organizer**. This strategy helps us *visualize* the new things we learn while reading. Visualizing the information will help us understand and remember it better. This story tells us about events in the past, so we can make a timeline as we read.”

Pass out sheets of paper or ask students to take out their notebooks.

“Let’s start by drawing a line across our paper. As we read the first part of the story, look for dates. Make a note on your paper of the earliest date on the left side of the paper. Put ‘Today’ on the end of the line at the right side of the paper.”

Show students the graphic on the next slide. Then play the first part of the story, to “*But the citizen group has found a way to make it useful again.*”

## Timeline for Citizen Scientists Take Control of Old Satellite



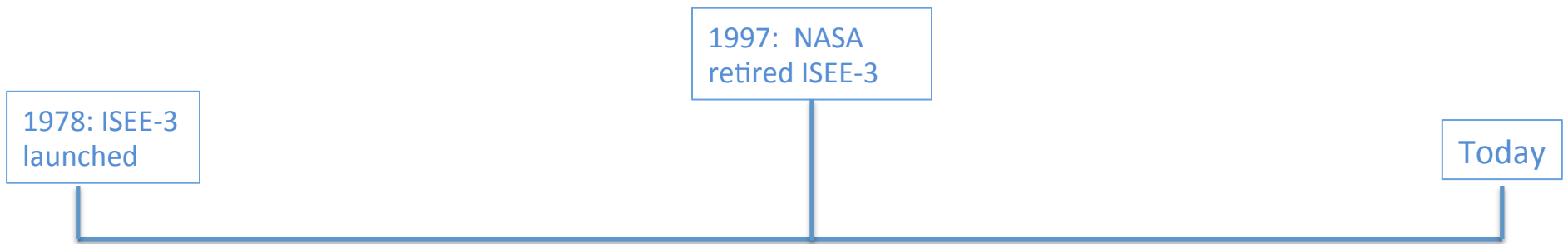


Stop the recording and ask, “Ok, what dates did you hear or see?” Students should give 1978 and 1997. Ask, “Where should we put 1978? It’s earlier than 1997, right? So let’s put it at the left side of our timeline.”

Ask, “Where should 1997 go?” Students will suggest a point in between the two ends of the line.

If possible display a large version of the timeline for the class using a projector or a chalkboard. Ask students to write words indicating what happened for each date. They need only write a few words; it is hard to write sentences on a timeline.

## Timeline for Citizen Scientists Take Control of Old Satellite



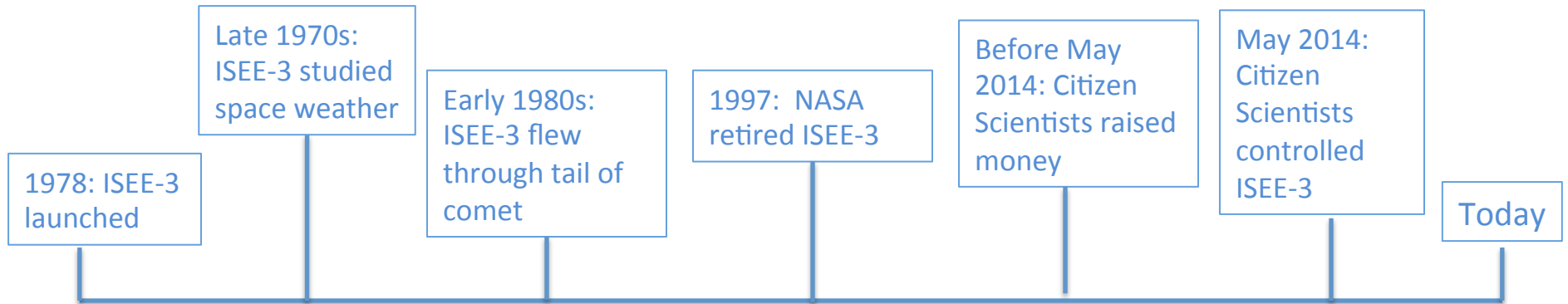
# Practice

Say, “Now it’s your turn. Let’s read the next section. Be ready to take note of what happened at each date mentioned. Remember to *visualize* the events in the story.”

*Play the story to “Which, in essence we were in command of the spacecraft.”*

Next, ask students to work with a neighbor to write the dates and events they have heard on their timeline. Have a student or two enter the dates on the shared timeline for the class.

## Timeline for Citizen Scientists Take Control of Old Satellite



Say, “Let’s read another section now. Check to see if you can connect more of the new ideas in the story.”

**Play to the end of the story.**

Repeat the procedure in which students share their **connections**.

Explain to students: “Scientists tell us that we never learn anything that is totally new. We learn by connecting new things to what we have learned before.”

# Self-Evaluation

Ask students if they think visualizing the order of the events in the story helped to understand this story. “Do you think **creating a graphic organizer** will help you remember the story?”

Have one student turn their paper over, and face the back of the room (so they cannot see the chalkboard or screen with the timeline on it.) Have their partner ask them to say what happened at one of the dates on the timeline. For this activity, students should be encouraged to use complete sentences. If a student’s partner does not remember, let the other student prompt them with a word or two.

# Expand

Wrap up the lesson by asking students to think of other times they can **create graphic organizers** and *visualize* the events of a story. Possible answers are ‘listening to a lecture, studying history, or writing a biography.

Encourage students to go home and **create a graphic organizer** with a homework assignment; or material being learned in their next class.

# Expand

If the class has access to the Internet, ask them to watch the video at <http://spacecraftforall.com> by clicking on the box, “See the Journey.” This video is a documentary about the citizen-scientists. At the bottom of the screen there is a timeline. After watching it, students can compare their own timeline with the one shown in the video. When they return to class, ask them how their timeline was different from the one in the video.



# About the CALLA Approach

The Cognitive Academic Language Learning Approach (CALLA) is an instructional model for second and foreign language learners based on cognitive theory and research.

CALLA integrates instruction in priority topics from the content curriculum, development of the language skills needed for learning in school, and explicit instruction in using learning strategies for academic tasks.

The goals of CALLA are for students to learn essential academic content and language and to become independent and self-regulated learners through their increasing command over a variety of strategies for learning in school. CALLA can be used in ESL, EFL, bilingual, foreign language, and general education classrooms.

CALLA was developed by Anna Uhl Chamot and J. Michael O'Malley, and is being implemented in approximately 30 school districts in the United States as well as in several other countries.

See a list of language learning strategies here:

<http://calla.ws/wp-content/uploads/2014/04/strategylist.pdf>