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LITERACY

SPACE SALVAGE
Teacher Manual

Contents

Goals/Objectives

English Language Arts Standards	Phonological Awareness: students will be able to demonstrate understanding of spoken words, syllables, and sounds (phonemes)
Language/ Reading Skills	Students will be able to... • discriminate between sounds and to correctly identify sounds and sound sequences (listening accuracy) • understand and recall the order of sounds and words (auditory word recognition) • recognize and manipulate units of sound in spoken language such as words, syllables, onset and rime, and phonemes (phonological/phonemic awareness)
Cognitive Skills	Students will be able to… • use auditory and visual-spatial working memory to locate pairs of matching syllables or words (memory) • focus and sustain attention (attention) • improve auditory processing for syllables and visual-spatial processing for locations associated with sounds (processing)
Social-Emotional/ Executive Function Skills	Students will be able to... • selectively focus and sustain attention on a lesson or an activity • enhance student agency through retention strategy building • increase confidence in memory capacity training • regulate emotional responses (e.g., excitement or frustration)

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Exercise Overview

Exercise Screen

❶ Help
Provides access to help options:
- **How to** replays initial instructions and provides a model trial.
- **Progress** displays progress for each level and the entire exercise.

❷ Home
Returns the user to the Exercise Selector screen.

❸ Response Buttons
Plays the sound of a syllable or word; after finding another object with the same syllable or word, clicking the first object again will confirm the match and clear the two objects from the screen.

❹ Click Counter
Displays the number of clicks allowed to find and confirm all of the matches.

❺ Time
Shows time worked/time scheduled for the exercise.

❻ Points
Shows total points awarded across all of a day's sessions:
- Correct answers: 2 points for each correct answer
- Bonus points: If all objects are cleared in fewer than the allowed clicks, the number remaining on the click counter is added to the student's score.

❼ Level Progress
Displays the current level and percent completion of the level.

❽ Current Streak
Shows the number of consecutive correct grids passed since the last incorrect grid (or since the beginning of the session, if none have been incorrect).

❾ Highest Streak
Shows the highest number of consecutive correct grids passed in this session.

Task

The exercise screen shows a debris field in outer space, with 4, 8, or 16 identical objects organized in a grid pattern. Students listen to syllables or words and match them together to clear the grid within the maximum number of clicks remaining.

• Click an object to hear the syllable or word associated with that object.

• Then click another object to try to find the object with the matching syllable or word. If it plays the same syllable or word as the first object, you have found a match.

• Click again on the first object to confirm the match. If it is a match, the objects are removed. If it is not a match, the objects remain on the screen.

Collect the space debris by finding matching pairs. First, click an object and listen to the sound. Then click another object and listen to the sound. When you find a match, click again on the object that first played the sound you heard.
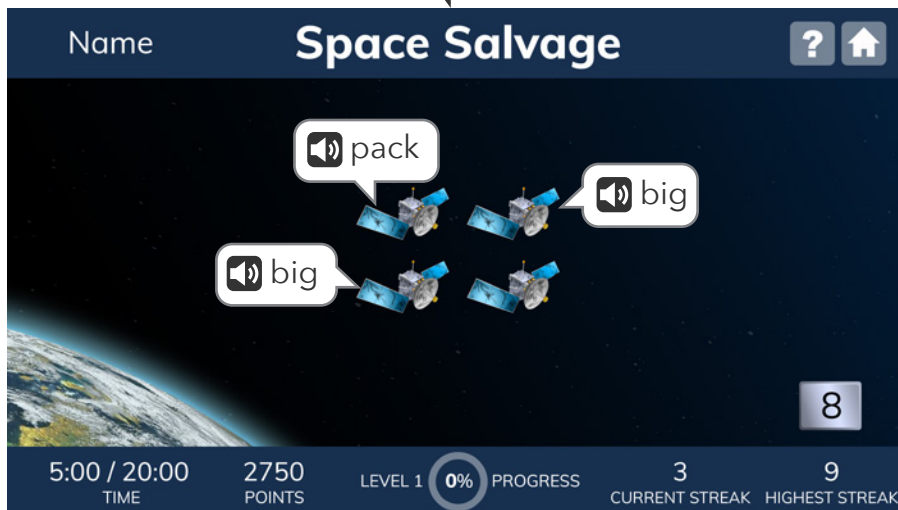
Look at the counter. Each time you click an object, the number goes down by one. To advance in Space Salvage, you must make all of the matches before the counter goes down to zero.

Icon Key

Audio	Download	English Learner	Quick Check	Settings	Video

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Content

Space Salvage Progression

As students work through the exercise it changes in a few ways:

- it begins with speech sounds that have been digitally altered; as students progress through the exercise, the processing level decreases, and eventually the syllables or words are presented using natural speech
- the grid size increases: 4, 8, and 16 objects

Introductory Level

Students begin by working through an introductory level that provides instructions, modeling, and supports (audio feedback and/or visual cues). It uses speech processing level 1, with a subset of highly differentiated words from the standard levels, and all three grid sizes. This level helps students learn the task and determine an effective strategy for making matches.

Introductory Set CVC Words
pack
big
tug
dip
gap
pit
cut
tick

Standard Levels

Syllables or words differ only by initial and/or final consonants. All four sets are repeated in each of the 5 speech processing levels and all three grid sizes.

Set 1 CVC Words	Set 2 CVC Words	Set 3 CVC Words	Set 4 CV Syllables
big	buck	back	ba
bit	bud	bag	cha
dig	but	bat	da
dip	cup	cab	ga
kick	cut	cap	ka
kid	duck	cat	la
kit	dug	gap	pa
pick	pub	pack	ra
pig	pup	pat	sa
pit	tub	tack	sha
tick	tuck	tag	ta
tip	tug	tap	za

Content

Motivational Levels

After each 20% of progress through the exercise, students "level up" and the screen changes slightly. These motivational levels are not connected to specific processing levels or content, only to percent completion.

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |

Targeted Practice

This exercise uses built-in, responsive technology to detect when a student is struggling and administer targeted, inline instruction—right when the student needs it—without any external resources or assistance required. This helps reduce frustration as it quickly gets students back on track, so they can continue making progress.

Space Salvage provides a variety of targeted interventions, such as: coaching, strategy walk-throughs and modeling, and motivational messages. The student's progression in the exercise stops temporarily while working through an intervention, then resumes when the student returns to the regular exercise content.

One type of intervention, Alternate Stimuli, allows students to learn how to complete the task and discover strategies for clearing the grids using number names instead of phonetically confusable syllables or words. It should be easier for students to distinguish between familiar number names and remember them. Students are provided immediate feedback as to whether their answer is correct or incorrect.

The objects in this debris field are a little different. The sounds they make are numbers. Find the objects with the matching numbers.
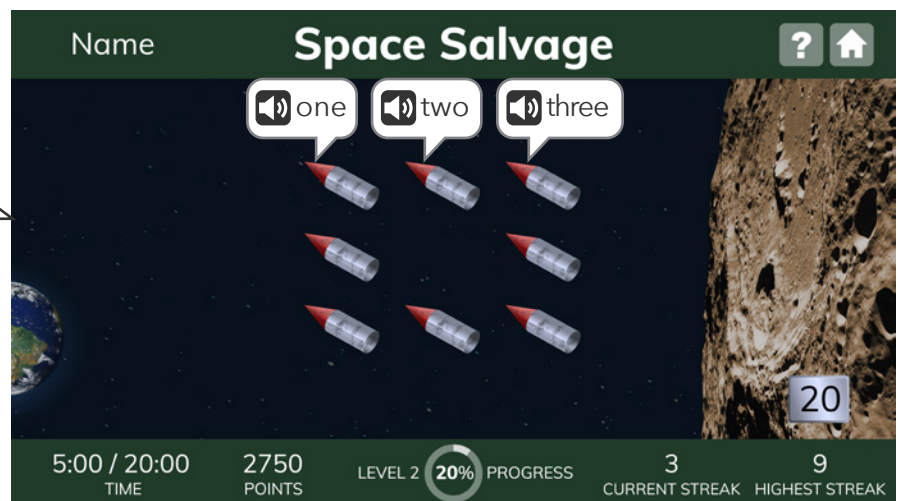
Acoustically Modified Speech

Have you ever worked with a student who had modifications for additional think time, extra wait time, or for teachers to speak more slowly? All of these modifications provide the student with extra time to make sense of information, also known as processing time. For students who struggle with processing speed, and for those learning a new language, slowing down the rate of speech and emphasizing specific sounds can help them develop accurate phonological representations while increasing comprehension.

Fast ForWord's acoustically modified speech technology—sometimes referred to as "glasses for the ears"—slows and emphasizes speech sounds so that students can hear all sounds in a word.

This technology can even stretch out sounds that are physically impossible for human speakers to stretch on their own.

"Why does everything sound so strange?"

Some speech sounds, such as the /b/ sound in the word "bat," have very fast transitional elements. When we say them aloud, these elements are easy to miss, but slowing them and emphasizing them (by presenting them at a higher volume) helps the brain process and respond to them more quickly.

The modified words and syllables in the Fast ForWord exercises may sound strange or mechanical to those who process sounds quickly. But for students who need a little extra time, the modified sounds and words will be easier to identify than natural speech. As students progress, the stretching and emphasis are reduced, pushing the brain to process at faster and faster rates until it can process natural speech.

▶ Why Does Everything Sound So Strange? (Student) in Student & Teacher Resources

▶ Why Fast ForWord Sounds the Way it Does (Teacher) in Student & Teacher Resources

Did you know?

In Space Salvage students match objects representing different, but similar sounding syllables or words together. Why did we choose the syllables and words used in this exercise? Space Salvage challenges the brain to distinguish syllables that represent common English language sound combinations and are very similar to one another—such as *big, dig* and *pig*. To do this, the brain has to be able to separate individual sounds of /b/, /i/, and /g/ that make up the word *big*.

Space Salvage exercises students' auditory processing ability so that they can distinguish these individual sounds and differentiate them from one another in closely related combinations. The words *big, dig* and *pig* vary by only their initial consonant sounds—/b/, /d/, and /p/—but the words have entirely different meanings. Confusing similar-sounding words impedes comprehension and can be very embarrassing.

Being able to hear and absorb information clearly is essential for rapid word recognition, helping the brain to accurately store and quickly recall content. The more accurately and precisely the sounds for each word are received and transmitted in the first place, the better the brain will be able to record it and relate it to other experiences. When the brain makes an attempt to recall the information about each different word—*big, dig* and *pig*—a clear image of each word, based on its distinct sounds, meanings and other associations will enable the brain to access the information faster and more easily. The increased speed in word recognition improves the ability to remember the words practiced and generalize to other similar words that might be easily confused or misread.

Introduce

Engage

To introduce the exercise to your students, you can start by explaining to students that they will be playing a memory matching game with sounds. Say: Have you ever been in a funny or embarrassing situation because you misheard a word? It happens to all of us—you've been singing along to a song in front of your friends when suddenly everyone looks at you funny and shakes their heads—you've got the words wrong. What's the funniest thing you know you misheard? Ask students to share some of their stories or share some of your own examples of when this has happened to you. The Space Salvage exercise encourages good listening and memory skills to locate and pair matching sounds in syllables and words that sound very similar to one another.

Demo

1. Say: Today, we're going to practice clicking objects, listening to the syllable or word they make, and then matching them together to clear a grid. Together, we'll work on an exercise called Space Salvage. I'll get us started, and then I'd like for you to try.
2. Project the Space Salvage Introduction (English or Spanish) demo.
3. Follow along with the demo, which explains how the exercise works.
4. Click the objects that match:
   - Correct answer: a "ding" plays and a pair of nets pop out from the edge of the screen and drag the matching objects off screen.
   - Incorrect answer: no sound plays and the objects remain on the screen.
5. Encourage students to share their strategies for working through the grid and remembering what they hear.
6. Keyboard shortcuts: there are none for this exercise.

Direct students to log in and work individually on the Space Salvage Demo for approximately 10 minutes. This time period mimics the timing of the exercise once it's assigned. Debrief with students to ensure they understand the task and objective of the exercise. Ask, What did you notice? Have students share anything they have questions about.

Space Salvage includes instructional audio for the exercise introduction, instructions, and targeted practice. By default, these are presented in English. You can, however, select Spanish instructions for all, some, or individual students on the Manage page in mySciLEARN.

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Facilitate and Encourage

Monitor Student Progress

Review Space Salvage reports regularly to monitor student progress. Use the data to determine which students are succeeding and which students might be struggling to make progress.

Where to look...

What to look for... what it means

PROGRESS: Elements I Exercise Progress - Space Salvage

The colored line shows student progress and their percent complete. Each dot indicates a day the student worked on the exercise.
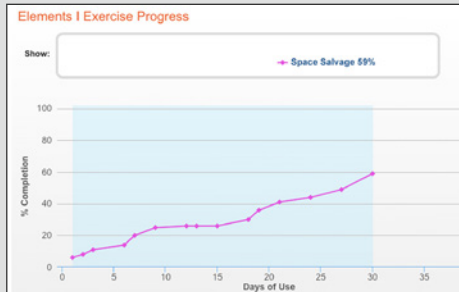
Is the line going up?
The student is completing content accurately and making progress.

Is the line flat across several dots?
The student may be struggling and you need to find out why.

Are there long lapses between dots?
The student may be skipping this exercise.

USAGE: Usage Details - Schedule

Do you see half-filled gray circles?
The student is working on this exercise, but not meeting the scheduled time. Make sure that they have time to complete their daily schedule. If fatigue is an issue, taking breaks is okay.

Do you see red circles?
The student is skipping this exercise. Provide support to help them re-engage.

USAGE: Usage Details - Minutes/Trials

Are many days highlighted in red?
The student is not meeting their daily schedule. Check the Schedule tab in this report to investigate further.

Is the student answering fewer questions than usual?
They may be distracted or losing focus. In comparison to their previous activity, a low number of trials to minutes may indicate the student is not applying themselves to the task.

Is the student answering more questions than usual?
They may be rushing. In comparison to their previous activity, a high number of trials to minutes may indicate the student is trying to amass points, or to progress more quickly, but rushing can result in mistakes. Remind them that making progress depends on accuracy, not speed.

Facilitate and Encourage

Where to look...	What to look for... what it means
PROGRESS: Progress Details - Space Salvage Completion Status	**Has the student taken too many trials without passing a level?**

What to look for... what it means

Has the student taken too many trials without passing a level?

Students who need more than 160 trials to pass the training level, or more than 1700 trials to pass a standard level may be struggling to approach the task strategically, or they may be having auditory processing and/or memory difficulties

The "Adjust Instruction/Intervene" section in this teacher manual provides suggestions for how to support students who might be struggling with Space Salvage.

Number of Trials
The number of trials (clicks) needed varies by level:

Training Level
- Minimum trials = 78

Standard Levels
- Minimum trials = 120
- Average range of trials for students making good progress = 700 - 1400

Elements I Progress Monitoring Chart in <u>Student & Teacher Resources</u>

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Adjust Instruction/Intervene

Differentiation Activities

Differentiating instruction requires continually striving to know and to respond to each student's needs in order to maximize learning. The activities below are suggestions to support students who might be struggling with their progress in Space Salvage.

✓ **Does the student understand the exercise goal/task?**

Observe the student as they work through the exercise demo to determine where their understanding may be breaking down. Make sure the student clearly understands the task of the exercise. Ask: Can you tell me what this exercise wants you to do? If needed, explain how the exercise works. Say, Click the images on the screen, listen to the sounds, and match them together to clear the grid.

✓ **Can the student repeat the sound they are trying to find?**

When the student can hold the word in their working memory it will increase their success with this exercise.

Facilitate and Encourage

☑ **Is the student attempting to find matches in a haphazard way?**

The student has a limited number of clicks to find a match. The more they click around randomly looking for a sound match, the more clicks they lose and the less progress they will make. The student needs to make all of the matches before the click counter goes to zero to advance to the next level. Clicking randomly will decrease the number of available clicks more quickly than using a strategy.

Listen with the student and observe them as they complete the task. Guide the student in using the following strategies:

- Teach the student to use a left-to-right, top to bottom strategy. After clicking the first sound, the student should hold that sound in their memory while they go left-to-right seeking the matching sound. Clicking in a pattern can help the student remember the sound for each location on the grid.

- Have the student remember the first sound clicked and then click until they find the matching sound. If the student can't remember the original sound, have the student click the location again to commit it to memory.

- Alternatively, have the student continually whisper to themselves the first sound clicked until the matching sound is located. When the student finds the match to the sound they are whispering, have them go back and click the original location to complete the match. Repeat this process with the next sound.

☑ **Is the student confused by the speech processing—do they think they should be able to understand words that their ears are not detecting?**

Work with the student to listen for "sounds" vs "words." Simulate environmental sounds (beep of a horn, moo of a cow, roar of a lion, etc.) and have the student repeat what they hear. The student will almost always be good at this. Go through several examples and then transition to the kinds of sounds students hear at the earliest levels of the exercise. For example, when the word *cap* is heard at processing level 1, the student will usually hear it as *cowp*. At this point, ask the learner to repeat the sound they hear 5 times. This gives the student the opportunity to refocus on repetition as a strategy for improving their working memory. Transition the student to working in the demos and have the student repeat the first sound they hear 3 to 5 times before clicking other space debris objects on the screen.

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Adjust Instruction/Intervene

Student Resources

You may decide to use any or all of these monitoring sheets with your students:

Elements I Streaks & Completion Chart in Student & Teacher Resources
Explain to students that accuracy is the key to moving through the content in Fast ForWord. Because streaks record the number of correct answers in a row, this chart can help students self-monitor for accuracy. After they complete their exercises for each day, have students record their highest streaks and percent complete in each exercise, then challenge them to exceed those numbers tomorrow. Students will need one copy every 5 days.

Elements I Completion Chart in Student & Teacher Resources
Students can self-monitor their progress in each Elements I exercise by filling in the bar each day with their actual completed percentage. This provides students with an overall view of how much content they've completed compared to how much they have left to do. Students will need one copy.