

How to Use the BrainSpark™ Learning Products

Including:

BrainSpark™ Learning Ages 5-9

BrainSpark™ Learning Ages 10 & Up



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Preface

Who Should Read This Manual?

How to Use the BrainSpark™ Learning Products is for individuals who would like detailed descriptions of the exercises in each product, including information on the skills emphasized within each exercise. In addition, this manual provides simple steps on how to view a learner's success in the exercises.

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Introduction

Welcome to BrainSpark™ Learning!

Scientific Learning's BrainSpark products accelerate learning by helping the brain process more efficiently, providing readers who are at or above grade level with intensive exercises that help strengthen the cognitive skills required to read and learn effectively. These cognitive skills—speed, processing rate, attention, recall, and knowledge (spark)—are essential for learning and reading success.

The strengthening of these cognitive skills results in a wide range of improved critical language and reading skills, such as phonological awareness, phonemic awareness, fluency, vocabulary, comprehension, decoding, working memory, syntax, grammar, and others, which are necessary to become a better reader.

This manual provides details on the following products:

- BrainSpark Learning Ages 5-9
- BrainSpark Learning Ages 10 & Up

Each chapter in this manual focuses on a specific product, providing detailed descriptions of the exercises in that product and information on the skills emphasized in each of those exercises. In addition, each chapter provides simple steps on how to view a learner's success in the exercises.

For more information on BrainSpark Learning products, visit our Web site at www.brainsparklearning.com.

Understanding the Science

The BrainSpark Learning products use patented technologies that leverage the science of brain plasticity—the brain’s ability to change at any age throughout life. These technologies trigger changes in the brain that provide a foundation for learning and reading success.

Additionally, the BrainSpark Learning products included in this manual employ a patented speech processing technology that enhances the speech sounds at early exercise levels, progressing to natural speech sounds at higher exercise levels. This technology includes two separate but equally important speech modification stages:

- Slowing down the speech (duration extensions)
- Enhancing the intensity of the rapid transitional elements in the speech (selective intensity increases)

Slowing down the speech

In this stage, our scientists use a patented processing algorithm to slow the rate of the entire speech signal while still maintaining the speech signal's natural quality.

For example, a word—such as *bat*—that may typically last one second in natural speech could last as long as one and a half seconds after this processing is applied.

By lengthening the duration of the speech, the fast speech elements—such as stop consonants—are further apart from the steady speech elements—such as vowels, which provides the auditory nervous system with more time to respond to the fast speech sounds.

Enhancing the intensity of the rapid transitional elements in the speech

In this stage, our patented software process identifies the fast transitional elements within the speech—such as the /b/ sound in the word *bat*—and then selectively amplifies those elements.

By applying these selective intensity increases, the more rapid transitional phonemes in the speech are emphasized, allowing the auditory nervous system to respond more vigorously to the fast speech sounds.

Combining both stages of patented speech processing technology provides the auditory nervous system with an enhanced speech signal that allows the learner to more effectively differentiate the rapid transitions in spoken language.

Chapter I

BrainSpark Learning Ages 5-9

This chapter describes each of the BrainSpark Learning Ages 5-9 exercises and then outlines the additional features within this product.

The Exercises

The BrainSpark Learning Ages 5-9 product consists of seven exercises: three sound exercises and four word exercises. The exercises work together to help improve the understanding of basic speech sounds as well as the fundamental cognitive skills essential for learning and reading.

The sound exercises present complex auditory information in a sub-word format, such as frequency sweeps and syllables. In some instances, the speech sounds have been digitally generated using patented methods (including selective intensity increases and duration extensions) to provide enhanced learning opportunities. The following three sound exercises are described in this chapter:

- Sky Gym
- Moon Ranch
- Hoop Nut

The word exercises present words, either in isolation or within sentences, with various levels of linguistic complexity. In some instances, the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. The following four word exercises are described in this chapter:

- Whalien Match
- Robo-Dog
- Ele-Bot
- Space Commander

Each of the exercises in the BrainSpark Learning Ages 5-9 product begins with an introduction that explains how to work on that exercise.

Sky Gym

Sky Gym helps improve the speed at which the learner identifies and understands rapid, successive changes in sound (listening accuracy), and the ability to recognize and remember the order in which a series of sounds is presented (auditory sequencing).

The object of Sky Gym is to help Gympo the athlete train and generate power for the gym by correctly identifying a sequence of two sound sweeps.



Working on Sky Gym

To work on Sky Gym, the learner clicks the yellow planet to hear a sequence of two sound sweeps. A sound sweep is classified as *up* (a lower to higher frequency) or as *down* (a higher to lower frequency). The learner must then click the up arrow or down arrow to identify the sequence of sound sweeps heard. For example, if the exercise presents an up sweep and then a down sweep, the learner must click the up arrow once, and then click the down arrow once. If the exercise presents two down sweeps, the learner must click the down arrow twice. Points are awarded when the sequence is correctly reproduced.

Sky Gym starts with a preparatory stage for each frequency sweep in the exercise, indicated by a closed powerball door. As the learner progresses through the preparatory stage, a marker moves around the lock on the door, indicating the learner's progress. When the learner masters the preparatory stage for a frequency, the powerball door is unlocked and the exercise automatically begins. The preparatory stage will be revisited when a new frequency is encountered for the first time.

Rewarding Progress in Sky Gym

To engage the learner, Sky Gym presents three exercise machines in a circuit across four workout levels. Each time Gympo completes a circuit through all three machines, Sky Gym increases the workout level by modifying the machines. To meet the increased challenge, Gympo acquires specialized leg extensions to help him train harder and generate more power for the gym. The number of extensions holding the horn indicates the workout level for the current circuit.

The three vents on the power generator represent the consecutive correct counter. The vents light up to indicate the number of consecutive correct responses. When the learner answers three consecutive trials correctly, the generator powerball accumulates more energy and the counter resets. When the learner answers three consecutive trials correctly six times, the powerball shoots into the generator, bonus points are awarded, and Gymbo’s workout switches to the next exercise machine.

The percent complete markers next to the yellow planet indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. The small paw indicates the 50% complete point. When it lights up, Cogger the dog joins in to help power the gym. Cogger works out with Gymbo for the rest of the exercise. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Using Help in Sky Gym

If the learner needs assistance identifying the sound sweeps, the learner can click the Help (?) button above the yellow planet to see all four possible sequences of sound sweeps at the current frequency (Hz), duration (length of each sound sweep), and ISI (time between sound sweeps).



When the help screen opens, the learner can click a yellow planet to hear the corresponding sequence of sound sweeps. To see the response buttons highlight as the sound sweeps play, the learner can click the corresponding button at the bottom of the screen.

NOTE Using help does not affect the learner’s standing in Sky Gym.

Understanding the Science in Sky Gym

Sky Gym presents sound sweeps using different frequency ranges, different sequences of sounds, and different time durations. The frequencies and durations of the sound sweeps correspond to some of the rapid transitions in the sounds of the English language.

The horn on the exercise machine indicates the current frequency range on which the learner is working. Sky Gym presents sound sweeps in three frequency ranges:

Horn	Frequency Range
Small	High (2000 Hz)
Medium	Middle (1000 Hz)
Large	Low (500 Hz)

As the learner progresses in a frequency, Sky Gym decreases the duration of the sound sweeps and the length of time between the sound sweeps, challenging the learner to improve his or her rate of auditory processing. For example, an 80 ms duration represents a sound sweep that lasts for 80 milliseconds. The shortest duration in Sky Gym, and consequently the highest level, is 25 ms.

The number on the exercise machine horn indicates the current duration on which the learner is working. Sky Gym presents the following durations in each frequency range:

Durations
80 ms
60 ms
40 ms
35 ms
30 ms
25 ms

Mastering Sky Gym

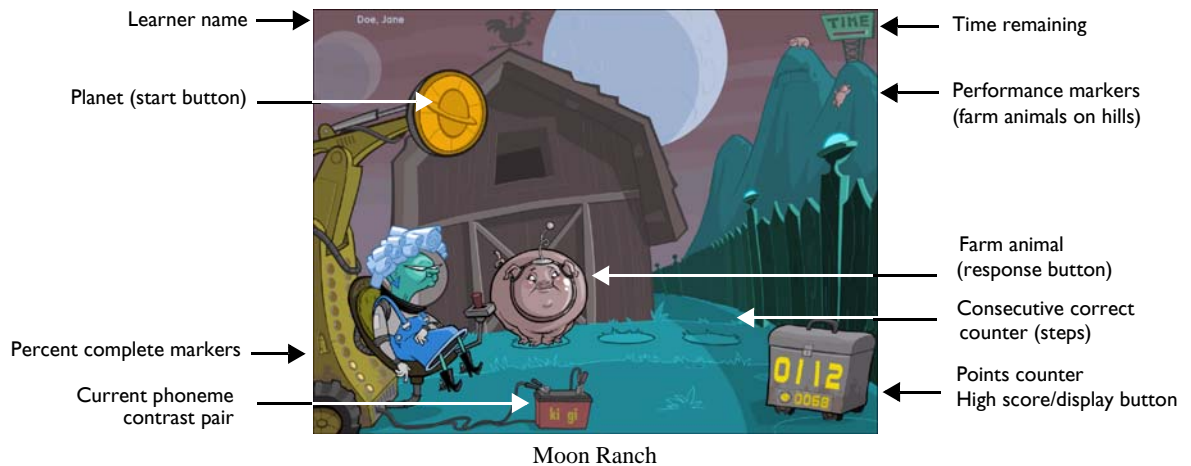
The learner will continue to work on the exercise until the skills in the exercise are mastered. If Sky Gym is revisited, the learner will continue to repeat the content at the shortest durations. For more information on revisiting exercises, see “Completing the Product” on page 29.

TIP	The following keyboard shortcuts are available in Sky Gym:	
	Button	Keyboard shortcut
	Planet (start button)	Left arrow or space bar
	Up arrow (response button)	Up arrow
	Down arrow (response button)	Down arrow

Moon Ranch

Moon Ranch helps improve the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency), the ability to remain focused on a given task while ignoring distractions and refraining from impulsive behavior (sustained attention), and the capacity for holding speech sounds in memory (phonological memory).

The object of Moon Ranch is to correctly identify when a new syllable interrupts a repeated syllable.



Working on Moon Ranch

To work on Moon Ranch, the learner clicks the yellow planet on Granny's tractor to hear a syllable repeated in rapid succession. When the exercise interrupts the repeated syllable with a new syllable, which differs by a single phoneme, the learner must click the farm animal to be moved into the pasture. If the animal is clicked too early or too late, the trial is counted as incorrect. When the learner answers the trial correctly, the exercise raises the animal a little higher toward the fence. Points are awarded for each correct answer.

Rewarding Progress in Moon Ranch

The three steps that raise the animal toward the pasture represent the consecutive correct counter. Each step indicates the number of consecutive correct responses by raising the animal a little higher for each consecutive correct answer. When the learner answers three consecutive trials correctly, the animal moves onto the next step. When the learner answers three consecutive trials correctly three times, the animal is transported over the fence and the exercise awards bonus points. As the learner continues answering trials correctly in a session, more and more farm animals can be seen in the hills behind the pasture, which can help indicate a more successful session performance.

The percent complete markers on Granny's tractor indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. The rocket indicates the 50% complete point. When it lights up, the exercise provides more fun and frequent reward animations. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Moon Ranch

Moon Ranch first presents syllables that have been digitally generated using patented methods (including selective intensity increases and duration extensions) to provide enhanced learning opportunities. Initially, one of the syllables in each pair includes a silent gap in between the consonant sound and the vowel sound, which emphasizes the difference between the two syllables. For example, for the pair *ki/gi* the syllable *ki* is initially presented as *k-i*.

As the learner progresses through the exercise, Moon Ranch reduces the silent gap until both syllables in a pair are presented using natural speech parameters. Also, as the learner progresses through the exercise, Moon Ranch decreases the length of time between the repeated syllables.

Moon Ranch presents the following phoneme contrast pairs of syllables:

Phoneme Contrast Pairs
gi-ki
chu-shu
si-sti
ge-ke
do-to
ba-da
de-be
bi-di

Mastering Moon Ranch

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Moon Ranch is revisited, the learner will continue to repeat the content at the highest stages in each phoneme contrast pair. For more information on revisiting exercises, see “Completing the Product” on page 29.

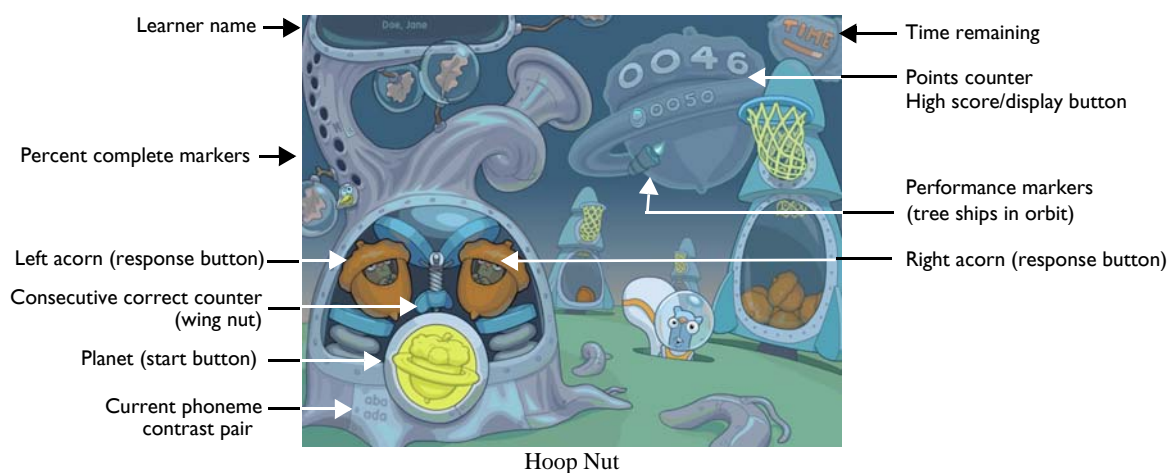
TIP The following keyboard shortcuts are available in Moon Ranch:

Button	Keyboard shortcut
Planet (start button)	Down arrow or space bar
Farm animal (response button)	Up arrow

Hoop Nut

Hoop Nut helps improve the ability to make correct distinctions based on individual phonemes (phonological accuracy), the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency), and the capacity for holding speech sounds in memory (phonological memory).

The object of Hoop Nut is to identify a target syllable when presented in a sequence of two syllables.



Working on Hoop Nut

To work on Hoop Nut, the learner clicks the yellow planet on the tree launcher to hear a target syllable. The learner must listen carefully as each of the two astro-nuts in the acorns present a different syllable. One presents the target syllable, while the other presents a syllable that differs from the target syllable by a single phoneme. The learner must click the acorn that presents the target syllable. Points are awarded for each correct answer. Bonus points are awarded after 12 correct answers.

Rewarding Progress in Hoop Nut

The wing nut above the yellow planet represents the consecutive correct counter, which tightens up a little more for each consecutive correct response. When the learner answers three consecutive trials correctly, the tree launcher shoots an acorn through the hoop on a nearby tree ship, and the counter is reset. When a tree ship fills with acorns, it blasts off into orbit around the planet. As the learner continues answering trials correctly in a session, more and more tree ships can be seen orbiting the planet, which can help indicate a more successful session performance.

The percent complete markers on the tree launcher indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. The “H” indicates the 50% complete point. When it lights up, *Hoop Drive* is invoked, which provides more fun and frequent reward animations and more fun ways to shoot hoops. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Hoop Nut

Hoop Nut first presents syllables in which the speech sounds have been digitally generated using patented methods (including selective intensity increases and duration extensions) to provide enhanced learning opportunities. Initially, the consonant sound in each syllable has been enhanced relative to the vowel sound. For example, the syllable *ba* is initially presented with an acoustically modified version of the /b/ sound.

As the learner progresses through the exercise, Hoop Nut decreases this processing, and eventually presents the syllables using natural speech parameters. Also, as the learner progresses through the exercise, Hoop Nut decreases the length of time between syllable choices.

Hoop Nut presents the following phoneme contrast pairs of syllables:

Phoneme Contrast Pairs
aba-ada
ba-da
be-de
bi-di
va-fa

Mastering Hoop Nut

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Hoop Nut is revisited, the learner will continue to repeat the content at the highest stages in each phoneme contrast pair. For more information on revisiting exercises, see “Completing the Product” on page 29.

TIP	The following keyboard shortcuts are available in Hoop Nut:	
	Button	Keyboard shortcut
	Planet (start button)	Down arrow or space bar
	Left acorn (response button)	Left arrow
	Right acorn (response button)	Right arrow

Whalien Match

Whalien Match helps improve the ability to accurately identify spoken words by relying on sound cues alone, without the aid of visual or context cues (auditory word recognition). It also helps develop the capacity for holding speech sounds in memory (phonological memory), the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency), and the ability to make correct distinctions based on individual phonemes (phonological accuracy).

Whalien Match displays a pod of shipwrecked whaliens in grids of four, eight, and sixteen. Each whalien has a syllable or word associated with it. The object of Whalien Match is to match all the syllables and words into pairs using the fewest clicks.



Whalien Match

Working on Whalien Match

To work on Whalien Match, the learner clicks a whalien on the screen. The exercise pronounces a syllable or word. The learner must click the other whaliens on the screen to find the whalien with the matching syllable or word. If the learner clicks a new whalien that matches one already clicked, the learner must then go back and click the first whalien of the pair to confirm the match. The two whaliens are then rescued by the vehicle on the surface. Points are awarded for each correct match.

Rewarding Progress in Whalien Match

The click counter on the surface displays the number of attempts (clicks) available to match all of the whaliens in the grid. Each time the learner clicks a whalien, this number is reduced by one, and one of the tokens disappears. However, even when this number reaches zero, the learner can still match syllables and words. When the learner matches all of the whaliens on the screen within the allowed number of clicks, the remaining tokens are awarded as bonus points.

When the learner matches all of the whaliens in a 4x4 grid within the allowed number of clicks, a periscope creature pops up through the surface. As the learner continues to clear 4x4 grids in the session, the periscope creature moves closer to the ship. When the creature reaches the ship, it jumps into the ship, bonus points are awarded, and a reward animation plays.

The percent complete markers on the left indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. The sea horse indicates the 50% complete point in Whalien Match. At this point, the exercise provides more fun and frequent reward animations. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Whalien Match

Whalien Match first presents syllables and words in which the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. Initially, the consonant sounds in each word have been enhanced relative to the vowel sound. For example, the word *bit* is initially presented with acoustically modified versions of the /b/ and /t/ sounds.

As the learner progresses through the exercise, Whalien Match decreases this processing, and eventually presents the syllables and words using natural speech.

The three processing level markers (stars) at the top of the screen represent the different speech processing levels in Whalien Match. While the learner works in a level, the corresponding marker lights up. When the learner completes a level, bonus points are awarded and the next marker lights up. When all three markers light up, the learner is working in the highest level.

Mastering Whalien Match

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Whalien Match is revisited, the learner will continue to repeat the content at the highest level. For more information on revisiting exercises, see “Completing the Product” on page 29.

Robo-Dog

Robo-Dog helps build knowledge of the phonological structure and meaning of words (vocabulary), and helps develop the ability to accurately identify spoken words by relying on sound cues alone, without the aid of visual or context cues (auditory word recognition).

Robo-Dog also improves the ability to make correct distinctions based on individual phonemes (phonological accuracy), and the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency).

The object of Robo-Dog is to identify the picture that represents a pronounced target word.



Working on Robo-Dog

To work on Robo-Dog, the learner clicks the yellow planet on Goldie the robo-dog's tag to hear a word pronounced. Four pictures appear on the screen. The learner must click the picture that represents the pronounced word. Points are awarded for each correct answer.

Robo-Dog presents words that differ by initial or final sound, or both. For example, the words *rake* and *lake* differ by initial sound. At the highest level, Robo-Dog also presents academic vocabulary, such as math and science terminology.

Rewarding Progress in Robo-Dog

The three buttons on the dog collar represent the consecutive correct counter. The buttons light up to indicate the number of consecutive correct responses. When the learner answers three consecutive trials correctly, a biscuit appears in the biscuit box on the left and the counter resets. When the learner answers three consecutive trials correctly three times, Goldie gets to eat the biscuits, the empty biscuit box moves to the right side of the screen, and the exercise awards bonus points.

When the learner accumulates four empty biscuit boxes, the golden biscuit box appears. This box fills with gold bones instead of biscuits. Bonus points are awarded when the golden biscuit box is filled, and the learner earns a special gold bone, which is displayed in the upper left corner of the screen. These gold bones can help indicate a more successful session performance.

The percent complete markers on the left indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Using Help in Robo-Dog

If the learner needs assistance with the vocabulary, the learner can click the Help (?) button next to Goldie to activate help. A question mark inside the planet indicates that help is on. When help is on, the exercise pronounces the word for each picture and briefly displays the picture on the screen before each trial is presented. This allows the learner to review the vocabulary before the actual trial starts.

Help remains on until the learner turns it off by clicking the Help button again, or until the learner completes all of the trials in the current content group.



When help mode is active, the learner will receive fewer points for a correct answer. In addition, fewer bonus points will be earned, and the trial will not count toward advancement in the exercise.

Understanding the Science in Robo-Dog

Robo-Dog first presents words in which the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. Initially, the consonant sounds in each word have been enhanced relative to the vowel sound. For example, the word *lake* is initially presented with acoustically modified versions of the /l/ and /k/ sounds.

As the learner progresses through the exercise, Robo-Dog decreases this processing, and eventually presents the words using natural speech.

The three processing level markers (stars) at the top of the screen represent the different speech processing levels in Robo-Dog. While the learner works in a level, the corresponding marker lights up. When the learner completes a level, bonus points are awarded and the next marker lights up. When all three markers light up, the learner is working in the highest level.

Mastering Robo-Dog

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Robo-Dog is revisited, the learner will continue to repeat the content at the highest level. For more information on revisiting exercises, see “Completing the Product” on page 29.

TIP	The following keyboard shortcuts are available in Robo-Dog:	
	Button	Keyboard shortcut
	Planet (start button)	Down arrow or space bar
	Pictures (responses), top left to bottom right	Number keys 1 through 4

Ele-Bot

Ele-Bot helps improve the learner's understanding of the relationship between words, grammar, and meaning (language structures). It also helps increase the speed at which the learner identifies and understands rapid, successive changes in sound (listening accuracy).

The object of Ele-Bot is to identify the picture that best represents a sentence or answers a question.



Working on Ele-Bot

To work on Ele-Bot, the learner clicks the yellow planet on Ella the electro-bot to hear a sentence pronounced. Two to four pictures are displayed on the screen. The learner must click the picture that most accurately represents the sentence. Points are awarded for each correct answer.

Ele-Bot presents questions and sentences that involve a range of grammatical difficulty. For example:

- “The boy is eating.” (easier)
- “The mouse is not being chased by the cat.” (more difficult)

The higher levels in Ele-Bot expose the learner to more complex grammar, but the learner is not required to master these trials in order to advance in the exercise.

Rewarding Progress in Ele-Bot

The light bulbs on Elle's head represent the consecutive correct counter. The light bulbs light up to indicate the number of consecutive correct responses. When the learner answers three consecutive trials correctly, a peanut appears in the bag on the left and the counter resets. When the learner answers three consecutive trials correctly three times, Elle gets to eat the peanuts, and the empty bag moves to the right side of the screen.

When the learner accumulates four empty peanut bags, the golden peanut bag appears. This bag fills with gold peanuts instead of regular peanuts. Bonus points are awarded when the golden peanut bag is filled, and the learner earns a special gold peanut, which is displayed in the upper left corner of the screen. These gold peanuts can help indicate a more successful session performance.

The percent complete markers on the left indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Ele-Bot

Ele-Bot first presents sentences in which the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. Initially, the consonant sounds in each word have been enhanced relative to the vowel sound. For example, the word *cat* is initially presented with acoustically modified versions of the /k/ and /t/ sounds.

As the learner progresses through the exercise, Ele-Bot decreases this processing, and eventually presents the sentences using natural speech.

The three processing level markers (stars) at the top of the screen represent the different speech processing levels in Ele-Bot. While the learner works in a level, the corresponding marker lights up. When the learner completes a level, bonus points are awarded and the next marker lights up. When all three markers light up, the learner is working in the highest level.

Mastering Ele-Bot

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Ele-Bot is revisited, the learner will continue to repeat the content at the highest level. For more information on revisiting exercises, see “Completing the Product” on page 29.

TIP	The following keyboard shortcut is available in Ele-Bot:	
	Button	Keyboard shortcut
	Planet (start button)	Down arrow or space bar
	Pictures (responses), top left to bottom right	Number keys 1 through 4

Space Commander

Space Commander helps improve the ability to listen to spoken directions of increasing length and complexity, comprehend them, and keep them in memory long enough to plan and carry out the required action (working memory).

Space Commander also helps improve the learner's understanding of the relationship between words, grammar, and meaning (language structures), and helps increase the speed at which the learner identifies and understands rapid, successive changes in sound (listening accuracy).

Space Commander presents a three-dimensional flight deck with rows of colored shapes. The object of the exercise is to correctly identify or manipulate those shapes according to the instructions presented.



Space Commander

Working on Space Commander

To work on Space Commander, the learner clicks the yellow planet on the control tower to hear the flight commander Admiral Bird present an instruction and illuminate the shapes on the flight deck. The learner must then follow that instruction. To touch a shape, the learner must click it. To move a shape, the learner must click and hold the mouse, drag the shape to the new location, then release the mouse button. Points are awarded for each correct answer, and bonus points are awarded after nine correct answers. If the instructions are followed incorrectly, the flight commander clears the flight deck, repeats the instructions, and indicates the correct action.

Space Commander starts with a preparatory stage that demonstrates the sizes, shapes, and colors referenced in the instructions. When the learner shows proficiency in this task, the preparatory stage automatically ends and the exercise begins. Additionally, each new session begins with 10 warm-up trials to help prepare the learner for that work session.

Space Commander presents instructions that include a range of difficulty. For example:

- “Touch the green circle.” (easier)
- “Put the blue circle between the yellow square and the white square.” (more difficult)

Additionally, some of the trials in Space Commander expose the learner to more complex instructions, but the learner is not required to master these trials in order to advance in the exercise.

Rewarding Progress in Space Commander

The flight commander represents the consecutive correct counter. She counts the number of consecutive correct responses on her fingers. Additionally, the signal officer behind the flight deck raises his signal flags. When the learner answers three consecutive trials correctly, the signal officer directs the pilot bird to fly into the globe and counter resets. As the learner continues answering trials correctly in a session, more and more birds fill the globe, which can help indicate a more successful session performance.

The percent complete markers on the left indicate the percentage of completed content in the exercise. Each one represents 10% of the exercise. When all 10 markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Space Commander

Space Commander first presents instructions in which the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. Initially, the consonant sounds in each word have been enhanced relative to the vowel sound. For example, the word *red* is initially presented with acoustically modified versions of the /r/ and /d/ sounds.

As the learner progresses through the exercise, Space Commander decreases this processing, and eventually presents the instructions using natural speech.

The three processing level markers (stars) above the control tower represent the different speech processing levels in Space Commander. While the learner works in a level, the corresponding marker lights up. When the learner completes a level, bonus points are awarded and the next marker lights up. When all three markers light up, the learner is working in the highest level.

Mastering Space Commander

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Space Commander is revisited, the learner will continue to repeat the content at the highest level. For more information on revisiting exercises, see “Completing the Product” on page 29.

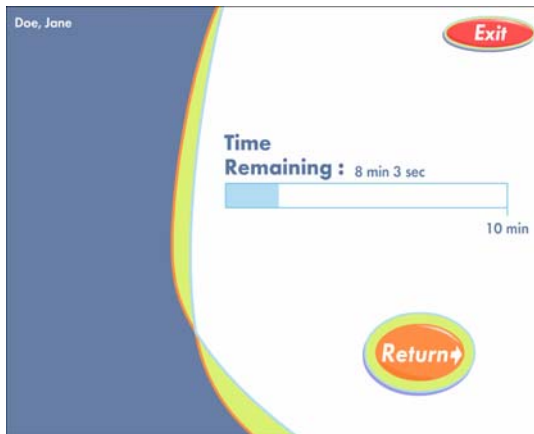
TIP	The following keyboard shortcut is available in Space Commander:	
	Button	Keyboard shortcut
	Planet (start button)	Down arrow or space bar

Additional Features

This section details the additional features that are included in the BrainSpark Learning Ages 5-9 product.

Checking the Exercise Status

While the learner is working on an exercise, use the Exercise Status screen to view the time remaining or quit the current exercise early.



Exercise Status

To access the Exercise Status screen while a learner is working on an exercise, press and hold the Control key, then press the equal sign key (=).

NOTE The Exercise Status screen cannot be accessed during a reward animation or during a trial.

When the Exercise Status screen is open:

- To return to the exercise, click Return.
- To quit the exercise, click Exit.



The exercise clock does not pause while the Exercise Status screen is displayed. If the learner needs to take a break, allow the learner to take the break after the exercise ends.

Completing an Exercise

When the learner completes an exercise for the day, the exercise exits and returns the learner to the Select an Exercise screen. To continue working, the learner must click another exercise. To take a short break, the learner should remain at the Select an Exercise screen. When the learner is ready to work again, the learner can select the next available exercise.

Exercise that have been completed for the day appear grayed out on the Select an Exercise screen. These exercises cannot be selected until the next work day.

NOTE Exercises also appear grayed out on the Select an Exercise screen when the exercise is not scheduled for the day, or when the exercise is closed because the content in the exercise has been mastered. For more information on mastering the exercises, see “Completing the Product” on page 29.

Exiting an Exercise Early

If the learner exits an exercise early, that exercise will remain available on the Select an Exercise screen for the rest of the session. The learner will be able to access the exercise until the daily time requirement is met; then, that exercise will no longer be available and will appear grayed out on the Select an Exercise screen.

The learner should continue working on all available exercises until the exercises are completed and the protocol for the day is met.

Completing the Session

When the learner completes all of the exercises scheduled for that day, participation bonus points are awarded and the Success Viewer appears.

NOTE A learner can return to the exercises and continue working after the session is completed. This will not affect the next day's protocol.

Exiting the Session Early

If the learner exits the session early, the Success Viewer appears. However, the learner should start another session that day and continue working until all of the exercises are completed and the protocol for the day is met.

The Success Viewer

At the end of each session, the product calculates the results for that learner and displays those results in the Success Viewer. This provides the learner with an immediate review of his or her performance, as a reward and a motivation to continue working on the exercises.

The Success Viewer Screens

When the Success Viewer appears, it displays the Points screen. The Points screen shows the points earned on the last participation day (the current day if the learner has just finished working), and the total points earned for each exercise. The Points screen also displays the last day's total points and the grand total points for all exercises.

NOTE The number of points earned in an exercise does not always reflect the learner's performance in that exercise; points are used only as a reward for correct answers, and to encourage the learner to continue working on the products.

The Points screen displays a clock next to an exercise when the learner works on the exercise for the required number of minutes that day. When the protocol for the day is met, a clock appears next to all of the exercises, and the screen displays the participation bonus points.

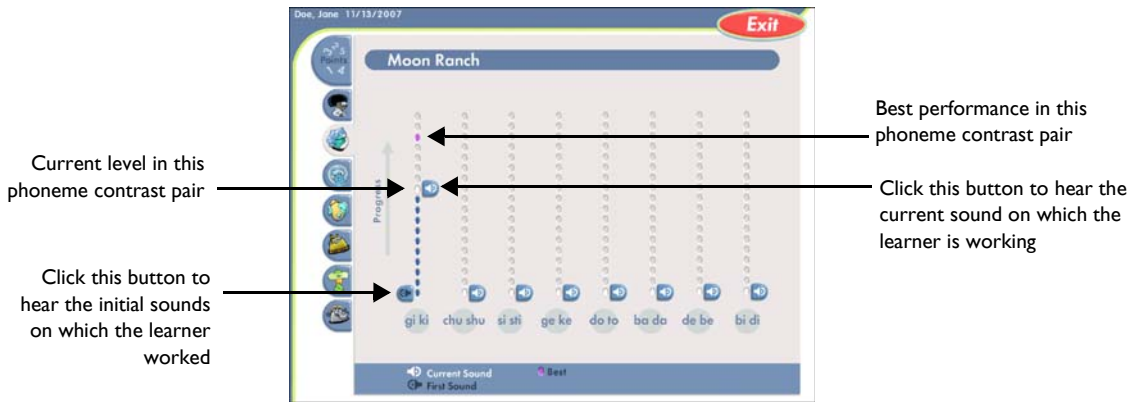
Click a tab to view performance in an exercise or return to the Points screen

Points	Last Day	Total
Sky Gym	75	275
Moon Ranch	0	225
Hoop Nut	57	162
Whalien Match	0	801
Robo-Dog	62	226
Space Commander	35	357
Ele-Bot	71	210
Participation Bonus	100	600
Last Day's Total		225
Grand Total		2256

Success Viewer – Points

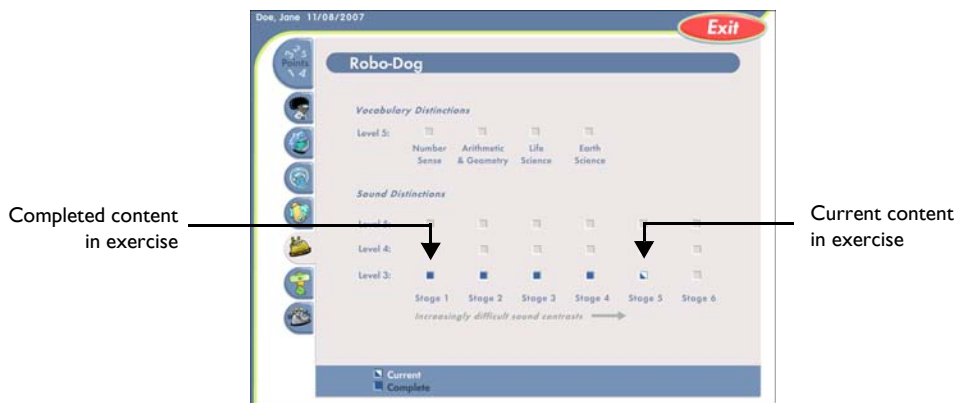
To view details about the learner's performance in an individual exercise, or to return to the Points screen, click the corresponding tab on the left. To exit the Success Viewer, click Exit.

The screens for Sky Gym, Moon Ranch, and Hoop Nut display a vertical graph for each phoneme contrast pair or sweep duration.



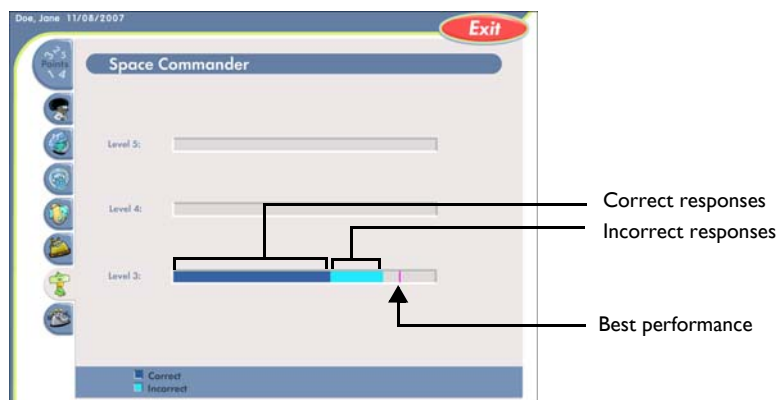
Success Viewer – Moon Ranch

The screens for Whalien Match and Robo-Dog display boxes for the content in the exercises.



Success Viewer – Robo-Dog

The screens for Space Commander and Ele-Bot displays horizontal bar graphs for each story.



Success Viewer – Space Commander

The Product Protocol

The BrainSpark Learning Ages 5-9 product—which includes a total of seven exercises—employs a rotating protocol that presents up to four exercises per day, for a total of 30 minutes each day. Each day’s participation time can be divided into multiple sessions.

Using this protocol, Scientific Learning recommends that the learner work on the BrainSpark Learning Ages 5-9 product five days a week, for an estimated 12 to 16 weeks.

A consistent daily routine that allows for intense repetition will maximize the benefits of the exercises. The learner may take breaks between exercises, but not while an exercise is open.

Completing the Product

As the learner masters an exercise in the BrainSpark Learning Ages 5-9 product, that exercise is closed. However, as more exercises are closed by the learner, a closed exercise may reopen at the highest levels so that the learner can continue working on the most important skills in the product.

As the learner continues to master exercises, the protocol adjusts the time spent in each exercise so that the learner always works on the open exercises for the total number of minutes in the protocol.

When the learner masters the last of the remaining exercises, all of the exercises are closed and the product is complete. If the product is accessed again, only the Success Viewer appears.

Chapter 2

BrainSpark Learning Ages 10 & Up

This chapter describes each of the BrainSpark Learning Ages 10 & Up exercises and then outlines the additional features within this product.

The Exercises

The BrainSpark Learning Ages 10 & Up product consists of six exercises: three sound exercises and three word exercises. The exercises work together to help improve the understanding of basic speech sounds as well as the fundamental cognitive skills essential for learning and reading.

The sound exercises present complex auditory information in a sub-word format, such as frequency sweeps and syllables. In some instances, the speech sounds have been digitally generated using patented methods (including selective intensity increases and duration extensions) to provide enhanced learning opportunities. The following three sound exercises are described in this chapter:

- Space Racer
- Galaxy Goal
- Spin Master

The word exercises present words, either in isolation or within sentences, with various levels of linguistic complexity. In some instances, the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. The following three word exercises are described in this chapter:

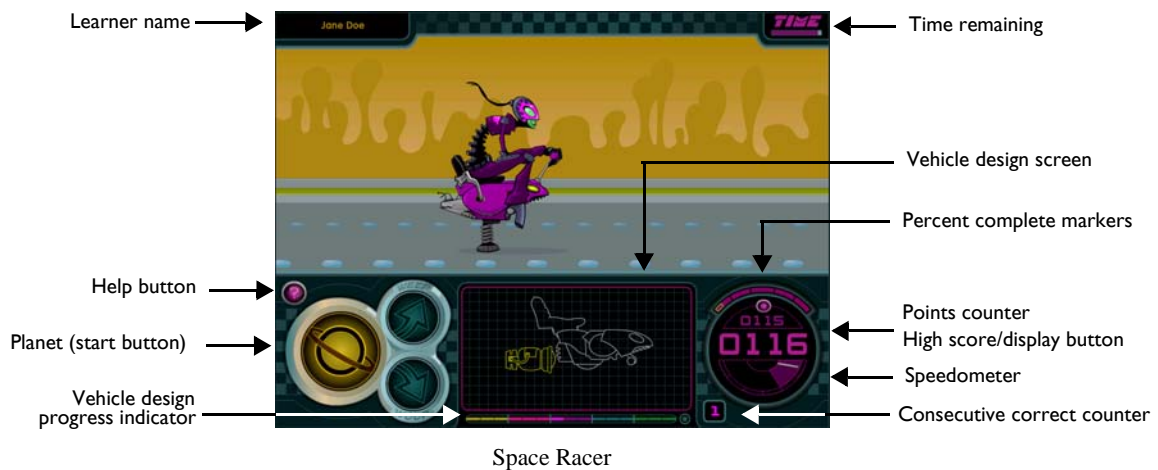
- Lunar Tunes
- Star Pics
- Stellar Stories

Each of the exercises in the BrainSpark Learning Ages 10 & Up product begins with an introduction that explains how to work on that exercise.

Space Racer

Space Racer helps improve the speed at which the learner identifies and understands rapid, successive changes in sound (listening accuracy), and the ability to recognize and remember the order in which a series of sounds is presented (auditory sequencing).

The object of Space Racer is to race on the space track as quickly as possible by correctly identifying a sequence of two sound sweeps.



Working on Space Racer

To work on Space Racer, the learner clicks the yellow planet to hear a sequence of two sound sweeps. A sound sweep is classified as *up* (a lower to higher frequency) or as *down* (a higher to lower frequency). The learner must click the up arrow or down arrow to identify the sequence of sound sweeps heard. For example, if the exercise presents an up sweep and then a down sweep, the learner must click the up arrow once, and then click the down arrow once. If the exercise presents two down sweeps, the learner must click the down arrow twice. Points are awarded when the sequence is correctly reproduced.

Space Racer starts with a preparatory stage for each frequency sweep in the exercise. When the learner masters the preparatory stage for a frequency, the exercise automatically begins. The preparatory stage will be revisited when a new frequency is encountered for the first time.

Rewarding Progress in Space Racer

The consecutive correct counter indicates the number of consecutive correct responses. When the learner answers three consecutive trials correctly, a reward animation plays and the counter resets.

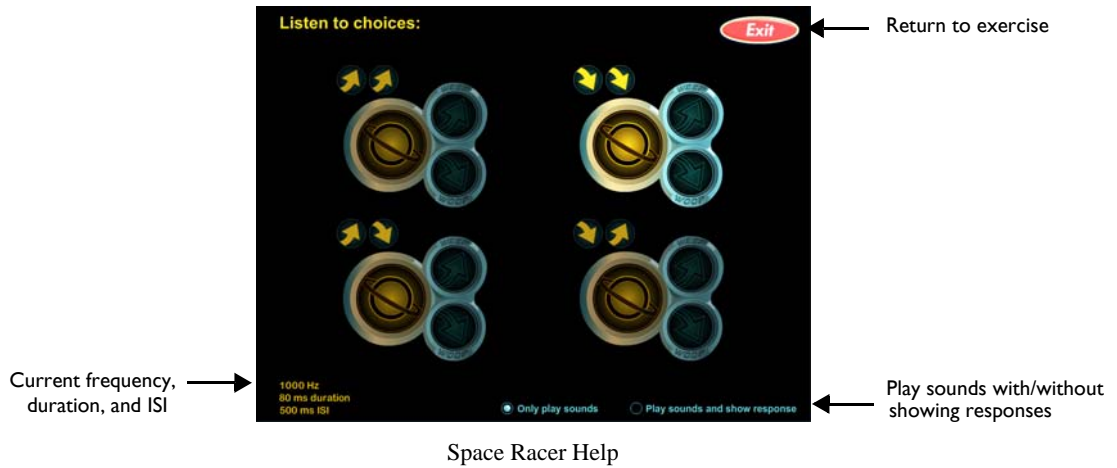
In each session, the space racer's speed increases and the racer's vehicle begins to wear down as the learner answers trials correctly. The speedometer indicates the speed of the racer. Once the speedometer enters the pink zone, the learner can start building a new vehicle. Each time the learner answers three consecutive trials correctly three times, the vehicle design screen adds a new part to the racer's next vehicle. The vehicle design progress marker indicates the number of parts that have been added to the vehicle. When the new vehicle is completely built, the vehicle transforms.

The percent complete markers above the speedometer indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers are filled in, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Using Help in Space Racer

If the learner needs assistance identifying the sound sweeps, the learner can click the Help (?) button below the yellow planet to see the different sequences of sound sweeps presented for the current frequency (Hz), duration (length of each sound sweep), and ISI (time between sound sweeps).



When help opens, the learner can click a yellow planet to hear the corresponding sequence of sound sweeps. To see the response buttons highlight as the sound sweeps play, the learner can click the corresponding radio button at the bottom of the screen.

NOTE Using help does not affect the learner's standing in Space Racer.

Understanding the Science in Space Racer

Space Racer presents sound sweeps using different frequency ranges, different sequences of sounds, and different time durations. The frequencies and durations of the sound sweeps correspond to some of the rapid transitions in the sounds of the English language.

Space Racer presents sound sweeps in three frequency ranges:

Frequency Ranges
High (2000 Hz)
Middle (1000 Hz)
Low (500 Hz)

As the learner progresses in a frequency, Space Racer decreases the duration of the sound sweeps and the length of time between the sound sweeps, challenging the learner to improve his or her rate of auditory processing. For example, an 80 ms duration represents a sound sweep that lasts for 80 milliseconds. The shortest duration in Space Racer, and consequently the highest level, is 25 ms.

Space Racer presents the following durations in each frequency range:

Durations
80 ms
60 ms
40 ms
35 ms
30 ms
25 ms

Mastering Space Racer

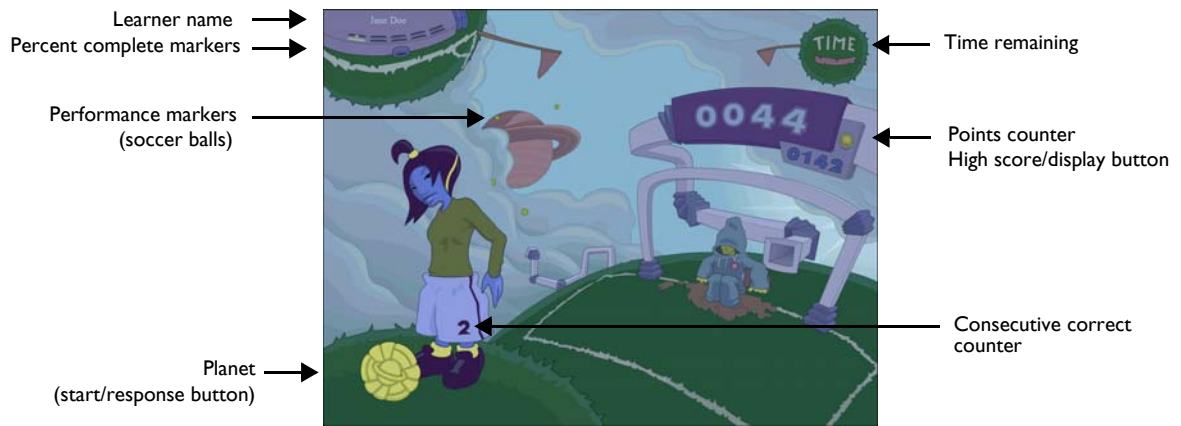
The learner will continue to work on the exercise until the skills in the exercise are mastered. If Space Racer is revisited, the learner will continue to repeat the content at the shortest durations. For more information on revisiting exercises, see “Completing the Product” on page 52.

TIP	The following keyboard shortcuts are available in Space Racer:	
	Button	Keyboard shortcut
	Planet (start button)	Left arrow or space bar
	Up arrow button	Up arrow
	Down arrow button	Down arrow

Galaxy Goal

Galaxy Goal helps improve the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency), the ability to remain focused on a given task while ignoring distractions and refraining from impulsive behavior (sustained attention), and the capacity for holding speech sounds in memory (phonological memory).

The object of Galaxy Goal is to identify when a new syllable interrupts a repeated syllable.



Galaxy Goal

Working on Galaxy Goal

To work on Galaxy Goal, the learner clicks the yellow planet on the soccer ball to hear a syllable repeated in rapid succession. When the exercise interrupts the repeated syllable with a new syllable, which differs by a single phoneme, the learner must click the soccer ball again. If the soccer ball is clicked too early or too late, the trial is counted as incorrect. When the learner answers the trial correctly, the player kicks the soccer ball toward the goal. Points are awarded for each correct answer.

Rewarding Progress in Galaxy Goal

The consecutive correct counter indicates the number of consecutive correct responses. When the learner answers three consecutive trials correctly, a reward animation plays and the counter resets. When the learner answers three consecutive trials correctly three times, bonus points are awarded and a reward animation plays. As the learner continues answering trials correctly in a session, more and more soccer balls can be seen orbiting the planet, which can help indicate a more successful session performance.

The percent complete markers below the learner name indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Galaxy Goal

Galaxy Goal first presents syllables that have been digitally generated using patented methods (including selective intensity increases and duration extensions) to provide enhanced learning opportunities. Initially, one of the syllables in each pair includes a silent gap in between the consonant sound and the vowel sound, which emphasizes the difference between the two syllables. For example, for the pair *ki/gi* the syllable *ki* is initially presented as *k-i*.

As the learner progresses through the exercise, Galaxy Goal reduces the silent gap until both syllables in a pair are presented using natural speech parameters. Also, as the learner progresses through the exercise, Galaxy Goal decreases the length of time between the repeated syllables.

Galaxy Goal presents the following phoneme contrast pairs of syllables:

Phoneme Contrast Pairs
gi-ki
chu-shu
si-sti
ge-ke
do-to
ba-da
de-be
bi-di

Mastering Galaxy Goal

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Galaxy Goal is revisited, the learner will continue to repeat the content at the highest stages in each phoneme contrast pair. For more information on revisiting exercises, see “Completing the Product” on page 52.

TIP The following keyboard shortcuts are available in Galaxy Goal:

Button

Planet (start trial)

Planet (response)

Keyboard shortcut

Down arrow or space bar

Up arrow

Spin Master

Spin Master helps improve the ability to make correct distinctions based on individual phonemes (phonological accuracy), the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency), and the capacity for holding speech sounds in memory (phonological memory).

The object of Spin Master is to identify a target syllable when presented in a sequence of two syllables.



Spin Master

Working on Spin Master

To work on Spin Master, the learner clicks the yellow planet to hear a target syllable. The learner must listen carefully as the DJ plays two syllables, one on each turntable. One turntable plays the target syllable, and the other plays a syllable that differs from the target syllable by a single phoneme. The learner must click the turntable that played the target syllable. Points are awarded for each correct answer, and bonus points are awarded after 10 correct answers.

Rewarding Progress in Spin Master

The consecutive correct counter in the reel indicates the number of consecutive correct responses. When the learner answers three consecutive trials correctly, a ring on the reel fills in, and the counter resets. When all three rings in the reel are filled in, the DJ launches the two discs from the turntables into the open slots on the dance floor. When three sets of discs have been launched, after the next three consecutive correct trials the disco party moves up to the next floor. As the learner continues answering trials correctly in a session, the disco floor number increases, which can help indicate a more successful session performance.

The percent complete markers in the laser generator indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers are light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Spin Master

Spin Master first presents syllables in which the speech sounds have been digitally generated using patented methods (including selective intensity increases and duration extensions) to provide enhanced learning opportunities. Initially, the consonant sound in each syllable has been lengthened and enhanced relative to the vowel sound. For example, the syllable *ba* is initially presented with an acoustically modified version of the /b/ sound.

As the learner progresses through the exercise, Spin Master decreases this processing, and eventually presents the syllables using natural speech parameters. Also, as the learner progresses through the exercise, Spin Master decreases the length of time between syllable choices.

Spin Master presents the following phoneme contrast pairs of syllables:

Phoneme Contrast Pairs
aba-ada
ba-da
be-de
bi-di
va-fa

Mastering Spin Master

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Spin Master is revisited, the learner will continue to repeat the content at the highest stages in each phoneme contrast pair. For more information on revisiting exercises, see “Completing the Product” on page 52.

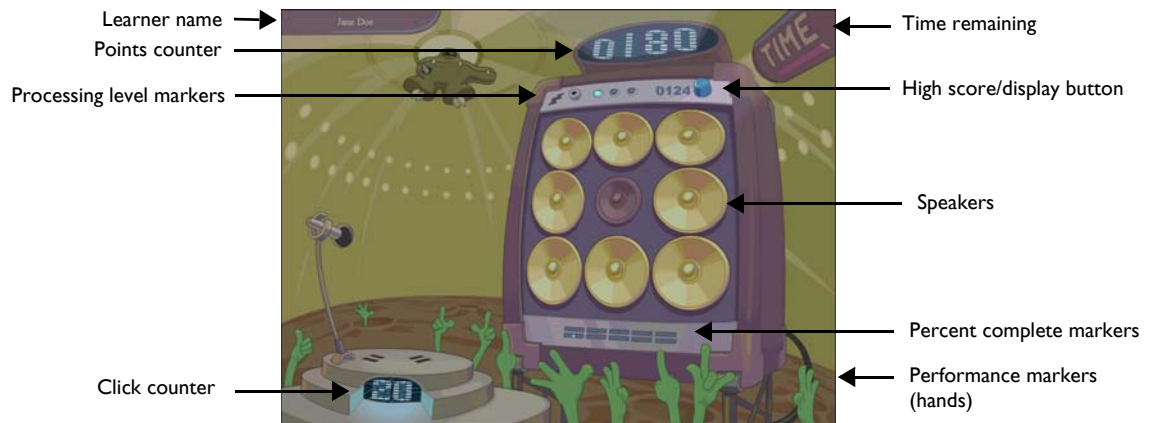
TIP The following keyboard shortcuts are available in Spin Master:

Button	Keyboard shortcut
Planet (start button)	Down arrow or space bar
Left turntable	Left arrow
Right turntable	Right arrow

Lunar Tunes

Lunar Tunes helps improve the ability to accurately identify spoken words by relying on sound cues alone, without the aid of visual or context cues (auditory word recognition). It also helps develop the capacity for holding speech sounds in memory (phonological memory), the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency), and the ability to make correct distinctions based on individual phonemes (phonological accuracy).

Lunar Tunes displays an amplifier with speakers in groups of four, eight, and sixteen. Each speaker has a syllable or word associated with it. The object of Lunar Tunes is to match all the syllables and words into pairs using the fewest clicks.



Lunar Tunes

Working on Lunar Tunes

To work on Lunar Tunes, the learner clicks a yellow speaker to hear the exercise pronounce a syllable or word. The learner must click the other yellow speakers on the amplifier to find the speaker with the matching syllable or word. If the learner clicks a speaker that matches one already clicked, the learner must click the first speaker of the pair to confirm the match. The two speakers turn off. Points are awarded for each correct match.

Rewarding Progress in Lunar Tunes

The click counter beneath the stage displays the number of attempts (clicks) available to match all of the speakers on the screen. Each time the learner clicks a speaker, this number is reduced by one. However, even when this number reaches zero, the learner can still match syllables and words. For each correct match, the instrument case lowers a bit closer to the stage. When the learner matches all of the speakers on the screen within the allowed number of clicks, the instrument case plugs into the stage, opens, and a musician jumps onto the stage and awards any remaining clicks as bonus points. As the learner continues answering trials correctly in a session, more and more hands can be seen in the audience, which can help indicate a more successful session performance.

The percent complete markers below the speakers indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Lunar Tunes

Lunar Tunes first presents syllables and words in which the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. Initially, the consonant sounds in each word have been enhanced relative to the vowel sound. For example, the word *bit* is initially presented with acoustically modified versions of the /b/ and /t/ sounds.

As the learner progresses through the exercise, Lunar Tunes decreases this processing, and eventually presents the syllables and words using natural speech.

The three processing level markers at the top of the amplifier represent the different speech processing levels in Lunar Tunes. While the learner works in a level, the corresponding marker lights up. When the learner completes a level, bonus points are awarded and the next marker lights up. When all three markers light up, the learner is working in the highest level.

Mastering Lunar Tunes

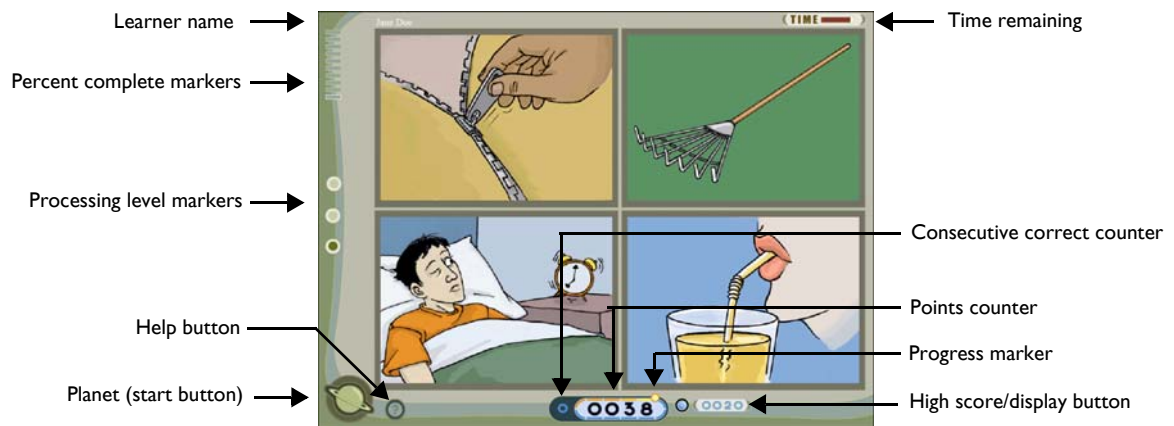
The learner will continue to work on the exercise until the skills in the exercise are mastered. If Lunar Tunes is revisited, the learner will continue to repeat the content at the highest level. For more information on revisiting exercises, see “Completing the Product” on page 52.

Star Pics

Star Pics helps build knowledge of the phonological structure and meaning of words (vocabulary), and helps develop the ability to accurately identify spoken words by relying on sound cues alone, without the aid of visual or context cues (auditory word recognition).

Star Pics also improves the ability to make correct distinctions based on individual phonemes (phonological accuracy), and the ability to identify and manipulate speech sounds in a quick and efficient manner (phonological fluency).

The object of Star Pics is to identify the picture that represents a pronounced target word.



Star Pics

Working on Star Pics

To work on Star Pics, the learner clicks the yellow planet to hear a word pronounced. Four pictures appear on the screen. The learner must then click the picture that represents the pronounced word. Points are awarded for each correct answer.

Star Pics presents words that differ by initial sound or final sound. For example, the words *rake* and *wake* differ by initial sound. At the highest level, Star Pics presents more advanced vocabulary from the other exercises in the product, such as Stellar Stories; and academic vocabulary, such as math and science terminology.

Rewarding Progress in Star Pics

The consecutive correct counter indicates the number of consecutive correct responses. When the learner answers three consecutive trials correctly, the progress marker above the score advances and the counter resets. Bonus points are awarded when the progress marker completes one rotation around the score.

The percent complete markers in the upper left corner indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Star Pics Help

If the learner needs assistance with the vocabulary, the learner can click the Help (?) button next to the yellow planet to activate help. A question mark inside the planet indicates that help is on. When help is on, Star Pics pronounces the word for each picture and briefly displays the picture on the screen before each trial is presented. This allows the learner to review the vocabulary before the actual trial starts.

Help remains on until the learner turns it off by clicking the Help button again, or until the learner completes all of the trials in the current content group.



When help mode is active, the learner will receive less points for a correct answer. In addition, bonus points will not be earned, and the trial will not count for advancement in the exercise.

Understanding the Science in Star Pics

Star Pics first presents words in which the speech sounds have been digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. Initially, the consonant sounds in each word have been enhanced relative to the vowel sound. For example, the word *lake* is initially presented with acoustically modified versions of the /l/ and /k/ sounds.

As the learner progresses through the exercise, Star Pics decreases this processing, and eventually presents the words using natural speech.

The three processing level markers on the left of the screen represent the different speech processing levels in Star Pics. While the learner works in a level, the corresponding marker lights up. When the learner completes a level, bonus points are awarded and the next marker lights up. When all three markers light up, the learner is working in the highest level.

Mastering Star Pics

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Star Pics is revisited, the learner will continue to repeat the content at the highest level. For more information on revisiting exercises, see “Completing the Product” on page 52.

TIP	The following keyboard shortcuts are available in Star Pics:	
	Button	Keyboard shortcut
	Planet (start button)	Down arrow
	Pictures, top left to bottom right	Number keys 1 through 4

Stellar Stories

Stellar Stories helps improve the ability to understand successive sentences and derive meaning from a story (listening comprehension). It helps improve the ability to listen to spoken directions of increasing length and complexity, comprehend them, and keep them in memory long enough to plan and carry out the required action (following directions).

Stellar Stories also helps build an understanding of the elements of the English language, including proper word order, syntax, prefixes and suffixes, plurals, and subject-verb agreement (English language conventions), and helps build knowledge of the phonological structure and meaning of words (vocabulary).

The object of Stellar Stories is to listen to a story and then answer questions and follow instructions.



Stellar Stories – Narration

Working on Stellar Stories

Stellar Stories consists of two stories presented across three levels: *Something About Sally* and *The Tank of Doctor Wong*. Each story presents four chapters, and each chapter includes three activities:

- **Narration and listening comprehension** – Presents a chapter of the story, then presents questions that test the comprehension of the story
- **Language comprehension** – Presents questions that test the comprehension of sentences
- **Following directions** – Presents activities that test the ability to comprehend and follow directions

When the learner completes all three activities in a chapter, Stellar Stories presents the next chapter in the current story. This continues until all four chapters in the current story are completed.

The activities in each chapter are detailed as follows.

Working on Narration and Listening Comprehension in Stellar Stories

Stellar Stories begins each chapter with the narration and listening comprehension activity.



Stellar Stories – Narration

To work on the narration and listening comprehension activity, the learner clicks the yellow planet to start the narration. The exercise aurally presents a chapter of the story along with illustrations. The current chapter is indicated at the bottom of the screen. The chapter length icons next to the current chapter indicate the number of pages in that chapter. As the exercise presents each page, the corresponding icon highlights, indicating the location in the chapter.



Stellar Stories – Listening Comprehension

When the narration ends, the learner clicks the yellow planet to hear a question related to the story. The learner must click the picture that illustrates the correct answer. Points are awarded for each correct answer.

The narration and listening comprehension activity challenges the learner to answer questions that are specifically designed to build comprehension and memory for details, main ideas, and relationships within the story.

Working on Language Comprehension in Stellar Stories

The second task in the chapter is the language comprehension activity.



Stellar Stories – Language Comprehension

To work on the language comprehension activity, the learner clicks the yellow planet to hear a sentence. The exercise presents two to four pictures that are possible representations of the sentence. Then the learner must click the picture that is the most accurate representation of the sentence. Points are awarded for each correct answer.

The language comprehension activity helps develop the understanding of language structures by challenging the learner to understand spoken sentences and then identify visual representations of each sentence. These questions and sentences include grammatical structures with a range of difficulty. For example:

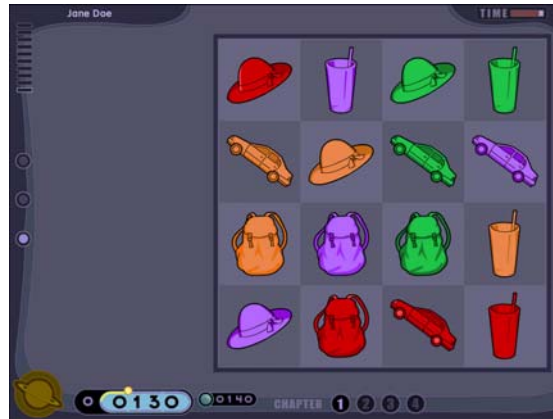
- “Sally sees the envelopes on the table.” (easier)
- “The girl that is hugging the baby brother is laughing.” (harder)

TIP The following keyboard shortcuts are available for the listening/language comprehension activities:

Button	Keyboard shortcut
Planet (start button)	Down arrow or space bar
Responses, top left to bottom right	Number keys 1 through 4

Working on Following Directions in Stellar Stories

The final task in the chapter is the following directions activity.



Stellar Stories – Following Directions

In the following directions activity, the learner clicks the yellow planet to hear an instruction. The learner must use the mouse to follow that instruction. To move an object, the learner must click and hold the mouse, drag the object to the new location, then release the mouse button. Points are awarded for each correct answer. If an incorrect object is clicked, or an object is moved to an incorrect location, the trial ends and the correct response is demonstrated.

The following directions activity presents increasingly complex directions as the learner progresses in the exercise. The learner must understand these directions in order to follow and execute them. These instructions include a range of difficulty. For example:

- “Touch the purple pillow and the green bed.” (easier)
- “Put the small yellow balloon between the purple pillow and the green bed.” (harder)

When the learner completes all three activities in a chapter, the next chapter begins. This continues until all four chapters in the story are mastered; then, the next level opens and a new story begins.

Rewarding Progress in Stellar Stories

Throughout Stellar Stories, the consecutive correct counter indicates the number of consecutive correct responses. When the learner answers three consecutive trials correctly, the progress marker above the score advances and the counter resets. Bonus points are awarded when the progress marker completes one rotation around the score.

The percent complete markers on the upper left side of the screen indicate the percentage of completed content in the exercise. Each marker represents 10% of the exercise. When all of the markers light up, the exercise is complete.

The high score represents the highest score ever achieved by the learner in one session. If the high score is distracting, the learner can hide it by clicking the corresponding display button.

Understanding the Science in Stellar Stories

Stellar Stories presents the first story with the speech sounds digitally altered using patented methods (including selective intensity increases) to provide enhanced learning opportunities. The consonant sounds in each word have been enhanced relative to the vowel sound. For example, the word *red* is initially presented with acoustically modified versions of the /r/ and /d/ sounds.

As the learner progresses through the exercise, Stellar Stories decreases this processing, and eventually presents the last story using natural speech.

Story	Processing Level
Something About Sally	Level 3 (less processed)
The Tank of Dr. Wong	Level 4 (less processed)
Something About Sally	Level 5 (natural speech)

The three processing level markers on the left side of the screen represent the different speech processing levels in Stellar Stories. While the learner works in a level, the corresponding marker lights up. When the learner completes a level, the next marker lights up. When all three markers light up, the learner is working in the highest level.

Mastering Stellar Stories

The learner will continue to work on the exercise until the skills in the exercise are mastered. If Stellar Stories is revisited, the learner will continue to repeat the last story at the highest level. For more information on revisiting exercises, see “Completing the Product” on page 52.

Additional Features

This section details the additional features that are included in the BrainSpark Learning Ages 10 & Up product.

Checking the Exercise Status

While the learner is working on an exercise, use the Exercise Status screen to view the time remaining or quit the current exercise early.



Exercise Status

To access the Exercise Status screen while a learner is working on an exercise, press and hold the Control key, then press the equal sign key (=).

NOTE The Exercise Status screen cannot be accessed during a reward animation or during a trial.

When the Exercise Status screen is open:

- To return to the exercise, click Return.
- To quit the exercise, click Exit.



The exercise clock does not pause while the Exercise Status screen is displayed. If the learner needs to take a break, allow the learner to take the break after the exercise ends.

Completing an Exercise

When the learner completes an exercise for the day, the exercise exits and returns the learner to the Select an Exercise screen. To continue working, the learner must click another exercise. To take a short break, the learner should remain at the Select an Exercise screen. When the learner is ready to work again, the learner can select the next available exercise.

Exercises that have been completed for the day appear grayed out on the Select an Exercise screen. These exercises cannot be selected until the next work day.

NOTE Exercises also appear grayed out on the Select an Exercise screen when the exercise is not scheduled for the day, or when the exercise is closed because the content in the exercise has been mastered. For more information on mastering the exercises, see “Completing the Product” on page 52.

Exiting an Exercise Early

If the learner exits an exercise early, that exercise will remain available on the Select an Exercise screen for the rest of the session. The learner will be able to access the exercise until the daily time requirement is met; then, that exercise will no longer be available and will appear grayed out on the Select an Exercise screen.

The learner should continue working on all available exercises until the exercises are completed and the protocol for the day is met.

Completing the Session

When the learner completes all of the exercises scheduled for that day, participation bonus points are awarded and the Success Viewer appears.

NOTE A learner can return to the exercises and continue working after the session is completed. This will not affect the next day's protocol.

Exiting the Session Early

If the learner exits the session early, the Success Viewer appears. However, the learner should start another session that day and continue working until all of the exercises are completed and the protocol for the day is met.

The Success Viewer

At the end of each session, the product calculates the results for that learner and displays those results in the Success Viewer. This provides the learner with an immediate review of his or her performance, as a reward and a motivation to continue working on the exercises.

The Success Viewer Screens

When the Success Viewer appears, it displays the Points screen. The Points screen shows the points earned on the last participation day (the current day if the learner has just finished working), and the total points earned for each exercise. The Points screen also displays the last day's total points and the grand total points for all exercises.

NOTE The number of points earned in an exercise does not always reflect the learner's performance in that exercise; points are used only as a reward for correct answers, and to encourage the learner to continue working on the products.

The Points screen displays a clock next to an exercise when the learner works on the exercise for the required number of minutes that day. When the protocol for the day is met, a clock appears next to all of the exercises, and the screen displays the participation bonus points.



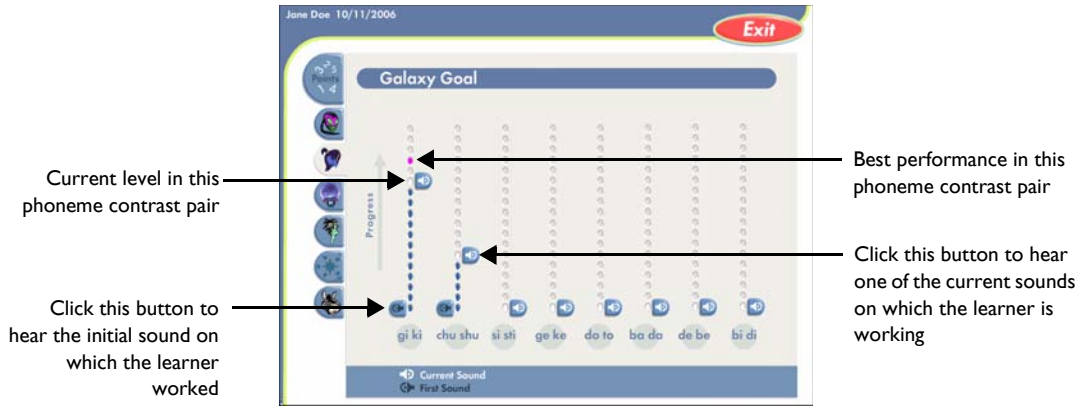
Click a tab to view performance in an exercise or return to the Points screen

Points	Last Day	Total
Space Racer	116	231
Galaxy Goal	44	186
Spin Master	39	193
Lunar Tunes	180	304
Star Pics	40	60
Stellar Stories	30	270
Participation Bonus	100	200
Last Day's Total	549	Grand Total 1444

Success Viewer – Points

To view details about the learner's performance in each individual exercise, or to return to the Points screen, click the corresponding tab on the left. To exit the Success Viewer, click Exit.

The screens for Space Racer, Galaxy Goal, and Spin Master display a vertical graph for each phoneme contrast pair or sound sweep duration.



Success Viewer – Galaxy Goal

The screens for Lunar Tunes and Star Pics display boxes for the content in the exercises.



Success Viewer – Star Pics

The screen for Stellar Stories displays horizontal bar graphs for each story.



Success Viewer – Stellar Stories

The Product Protocol

The BrainSpark Learning Ages 10 & Up product—which includes a total of six exercises—employs a rotating protocol that presents up to three exercises per day, for a total of 30 minutes each day. Each day’s participation time can be divided into multiple sessions.

Using this protocol, Scientific Learning recommends that the learner work on the BrainSpark Learning Ages 10 & Up product five days a week, for an estimated 12 to 16 weeks.

A consistent daily routine that allows for intense repetition will maximize the benefits of the exercises. The learner may take breaks between exercises, but not while an exercise is open

Completing the Product

As the learner masters an exercise in the BrainSpark Learning Ages 10 & Up product, that exercise is closed. However, as more exercises are closed by the learner, a closed exercise may reopen at the highest levels so that the learner can continue working on the most important skills in the product.

As the learner continues to master exercises, the protocol adjusts the time spent in each exercise so that the learner always works on the open exercises for the total number of minutes in the protocol.

When the learner masters the last of the remaining exercises, all of the exercises are closed and the product is complete. If the product is accessed again, only the Success Viewer appears.