Task and Level Counter

The current task and level are displayed in the Task and Level Counter located in the lower left corner of each activity screen. The Task and Level Counter also indicates the number of levels yet to be completed for the current task (e.g., Task: 1 Level 2/10 means the student is working on the second level out of a possible 10 levels for Task 1).

Scoring

A round of an activity consists of 10 auditory presentations and responses called trials. In some *Earobics* activities, trials are displayed at the bottom of the screen indicating whether or not a response is correct while in others, trials are displayed along one of the screen edges. Icons indicating correct and incorrect responses will vary from activity to activity. See *Earobics* activity descriptions for detailed scoring information.

Cursor Availability

To prevent a student from attempting a response before the auditory prompt is complete, the mouse pointer does not appear on the screen during auditory prompts. After the stimulus is presented, the mouse pointer will reappear three times its normal size, blink green, and return to normal size. This is the visual cue for students to respond.

Student Response Time

Student response time defaults to 10 seconds for each activity. If time elapses before the student responds, that response will be treated as incorrect. If the student requires more time to respond, click the **Audio Replay** icon to hear the stimulus again and reset the timer.

Select a different response time interval from the Response Time drop-down box in Student or Group Activity Preferences to change this option.

Languages

Earobics Step 2 software delivers activity instructions in 9 languages: English, Spanish, Arabic, Cantonese, Haitian Creole, Hmong, Polish, Russian, and Vietnamese.

Select a different language from the Language drop-down box in Student or Group Activity Preferences to change this option.

Continuous Rounds of Play

Looping is enabled by default. This option allows students to complete a round (10 trials) of a game. The Progress Chart will display for five seconds and then the student will progress to the next activity in the list.

To change this option, click once in the Enable Looping checkbox in Student or Group Activity Preferences.

Setting Levels

Educators may select a starting task, repeat a task, disable a task, or skip tasks for students. Disabled tasks cannot be played at all, while skipped tasks may be played if a student progresses or regresses to them.

Click the Enable Looping checkbox in Student or Group Activity Preferences to allow students to play one round (10 trials) of a given activity. The Progress Chart will display for five seconds and then the student will progress to the next activity in the list.

Disable the Enable Looping checkbox in Student or Group Activity Preferences to customize an activity's play settings by selecting starting tasks, disabled tasks, or skipped tasks. Students will log in, be presented with the Progress Chart and allowed to select an activity that has been assigned by their teacher.

Collecting Data

Data is collected automatically during normal activity play and upon early exit by students if they click the **Exit** button. If a student fails to respond twice due to response timeout, the system will prompt the student "Do You Want To Play Again?" If a student clicks Yes, the system will continue the activity where the student left off. If a student clicks No, the system will display the Progress Chart and not record the two incorrect trials (due to lack of response) but will record any trials responded to previously during the activity.

Adaptive Training

Earobics carefully monitors each student's progress. The software automatically increases or decreases the level of difficulty for an activity, so a student is always working at the level appropriate to his or her needs. Some activities may not advance levels until the start of the next round of play, even though the criterion for advancement has been met. See each activity's description for its adaptive training criteria.

CALLING ALL ENGINES

Calling All Engines strengthens students' auditory memory and language processing.

Primary Skills

Auditory Sequential Memory, Attention and Short-term Memory, Following Oral Directions, Comprehension of Linguistic Concepts, Auditory Performance with Competing Signals

Related Skills

Auditory and Phoneme Discrimination, Sound-Symbol Correspondence

Tasks

Task 1: Auditory memory for digits (10 levels)
Task 2: Following directions: digits and linguistic concepts (20 levels)
Task 3: Following directions: digits, linguistic concepts, and competing noise (6 levels)
Task 4: Auditory memory for words (8 levels)
Task 5: Following directions: words and linguistic concepts, (20 levels)
Task 6: Following directions: words, linguistic concepts, and competing noise (6 levels)
Task 7: Auditory memory for long vowel phonemes (8 levels)
Task 8: Following directions: long vowel phonemes and linguistic concepts (20 levels)
Task 9: Following directions: long vowel phonemes, linguistic concepts, and competing noise (6 levels)
Task 10: Auditory memory for short vowel phonemes (8 levels)
Task 11: Following directions: short vowel phonemes and linguistic concepts (20 levels)
Task 12: Following directions: short vowel phonemes, linguistic concepts, and competing noise (6 levels)
Task 13: Auditory memory for consonant phonemes (8 levels)
Task 14: Following directions: consonant phonemes and linguistic concepts (22 levels)

Learning Variables

Auditory memory skills, following directions, and background noise are learning variables applied throughout the 14 tasks in Calling All Engines. An explanation of each follows.

Auditory Memory Skills

Calling All Engines provides systematic skill training across 168 levels of instruction. Calling All Engines builds auditory sequential memory by increasing the number of sounds the student must remember and by removing visual cues. Initially, the student sees the symbols as sounds are presented. As the student progresses, the symbols do not appear until after sounds are presented, requiring the student to rely on auditory memory skills for his or her response.

Following Directions

Once the student successfully sequences five items without visual cueing, Calling All Engines requires the student to follow oral directions containing linguistic concepts (e.g., "Before you click on /w/, click on /p/").

Background Noise

When the student can follow oral directions successfully, Calling All Engines has him or her focus attention in the presence of competing background noise. The volume of the background noise increases or decreases based on the student's performance.

How to Play

Help FireFighter Fly put out the fire in the burning building by recalling a series of numbers, words and speech sounds, and by following directions of increasing complexity. Click on the fire hydrant to bypass the opening instructions and to begin the task. If looping is enabled for a student or a group of students, Calling All Engines will start automatically after five seconds once students log in. If looping is disabled, click on the **FireFighter Fly** icon on the Progress Chart to begin.

A number appears inside each of the nine windows of the burning building. FireFighter Fly gives directions to click on a number. (Note: the cursor will disappear during the presentation of the number.) Position the cursor over the number heard and wait until a blue frame appears around the selected window. Click on the number before FireFighter Fly runs out of water.

After three consecutive correct responses, Calling All Engines automatically advances the level of difficulty by increasing the number of digits spoken.

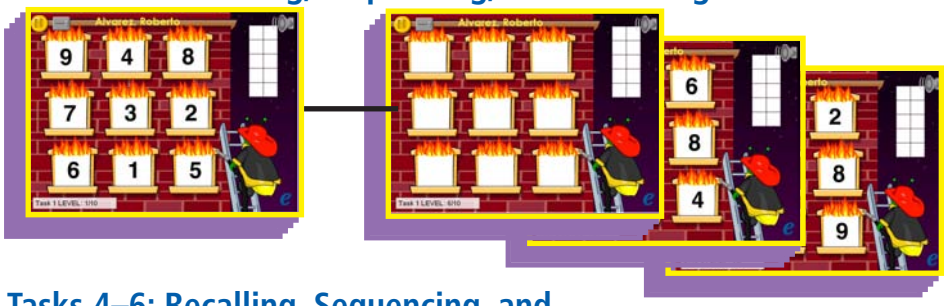
When two or more numbers are presented, click on the numbers in the order they were presented. Calling All Engines continues to advance in difficulty by increasing the amount of numbers, concealing the digits until after numbers have been spoken, increasing the complexity of directions, introducing low and high levels of background crowd noise, and varying the type of sounds presented.

After two consecutive incorrect responses, the level of play decreases automatically.

Scoring:  correct response,  incorrect response

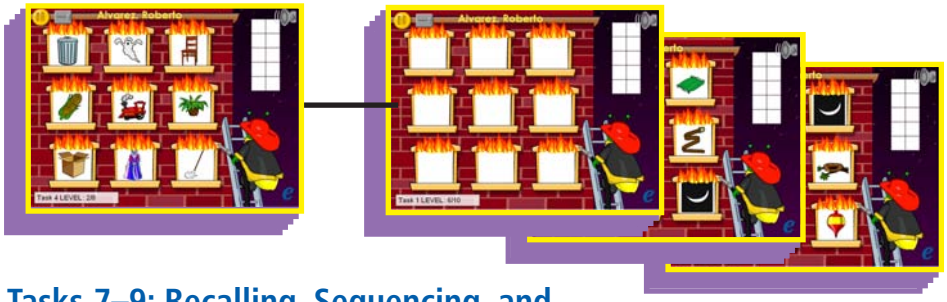
"Click on the sounds you hear."

Tasks 1–3: Recalling, Sequencing, and Following Directions with 1–5 Digits

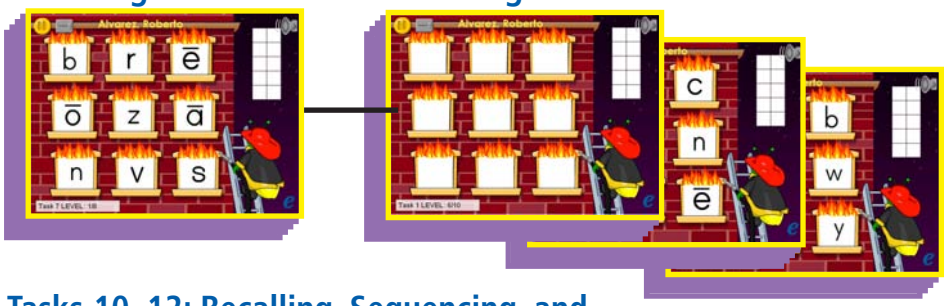


Increasing Challenge
As the activity progresses, the student will recall and sequence up to five items in order. The software automatically adjusts the number of stimuli depending upon the student's performance.

Tasks 4–6: Recalling, Sequencing, and Following Directions with 1–4 Words

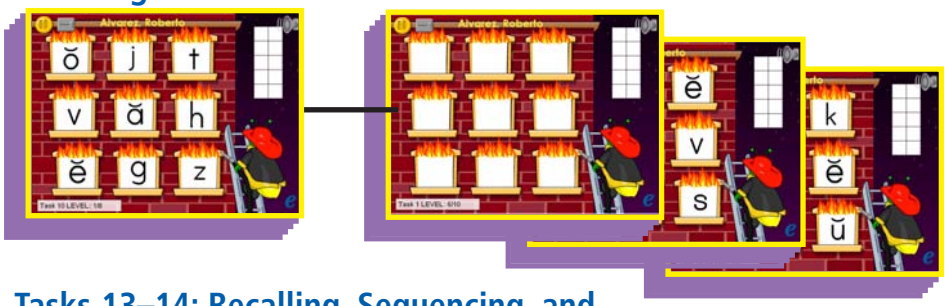


Tasks 7–9: Recalling, Sequencing, and Following Directions with 1–4 Long Vowel Sounds



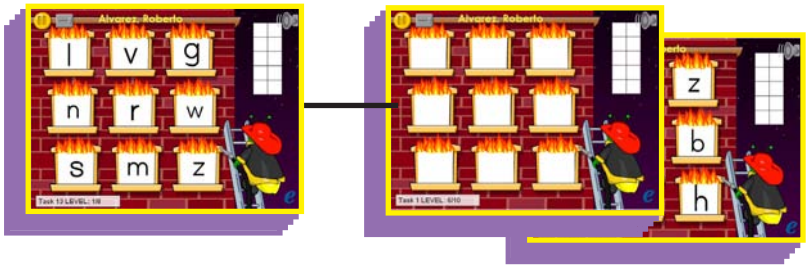
Delayed Visual Cueing
As the activity progresses, students will not see pictures or letters until after the auditory stimuli are presented. Delayed visual cueing requires the student to rely on auditory memory to complete the task.

Tasks 10–12: Recalling, Sequencing, and Following Directions with 1–4 Short Vowel Sounds



Background Noise
Background noise is systematically introduced, requiring the student to listen and focus in the presence of competing distractions. The volume of the background noise increases or decreases depending upon the student's performance.

Tasks 13–14: Recalling, Sequencing, and Following Directions with 1–4 Consonant Sounds



PAINT BY PENGUIN

Paint by Penguin helps the student increase reading speed and accuracy, and improve spelling by developing his or her ability to count, segment, sequence and manipulate sounds.

Primary Skills

Phonological Segmentation and Manipulation, Phonological Sequencing, Auditory Temporal Resolution, Auditory Temporal Ordering and Pattern Recognition, Auditory Short-term and Sequential Memory

Related Skills

Auditory Attention, Auditory and Phoneme Discrimination, Following Oral Directions, Comprehension of Linguistic Concepts

Task 1: Counting number of phonemes (12 levels)
Task 2: Segmenting phonemes in a word with simple syllable structure (6 levels)
Task 3: Segmenting phonemes in a word with complex syllable structure (4 levels)
Task 4: Counting and sequencing phonemes (12 levels)
Task 5: Segmenting and sequencing phonemes in a word with simple syllable structure (6 levels)
Task 6: Segmenting and sequencing phonemes in a word with complex syllable structure (4 levels)
Task 7: Manipulating phonemes (24 levels)

Learning Variables

Counting sounds, segmenting words into sounds, manipulating sounds, and auditory feedback are learning variables applied in Paint by Penguin. An explanation of each follows.

Counting Sounds

Paint by Penguin uses 68 levels of instruction to teach phoneme segmentation and manipulation skills. It establishes the foundation for phoneme segmentation with activities in counting speech sounds. Paint by Penguin requires the student to process sounds increasingly quickly by providing practice at time intervals ranging from 1.0 to .25 second.

Segmenting Words into Sounds

Once the student is successful counting sounds, he or she learns to segment words into individual sounds.

Manipulating Sounds

As the student's skills progress, Paint by Penguin teaches the student to manipulate speech sounds. The student creates new real and nonsense words by rearranging, deleting, substituting, and adding sounds. The words progress from short to long and from simple to complex syllable structures.

Auditory Feedback

Initially, Paint by Penguin provides auditory feedback by repeating the sounds as the student clicks on the mouse. As the student progresses, the auditory feedback is removed. With no auditory feedback, the student learns to respond independently.

How to Play

Paint masterpieces with Pierre Penguin by selecting a sponge to count, sequence, segment, and manipulate speech sounds. Click on a sponge to bypass the opening instructions. If looping is enabled for a student or a group of students, Paint By Penguin will start automatically after five seconds once students log in. If looping is disabled, click on the **Penguin** on the Progress Chart to begin.

Tasks 1-3: Pierre presents one to three speech sounds. When Pierre turns to face the canvas and the **Speaker** icon appears on screen, click the mouse once for each speech sound heard. A sponge print appears with each click of the mouse. The number of sponge prints must match the number of sounds presented.

Paint by Penguin continues at the given level until at least eight correct responses out of ten are provided. Paint By Penguin then advances the level of difficulty by changing the interval between sounds, eliminating auditory feedback, and increasing the number of sounds presented. After the student becomes proficient at counting individual speech sounds, Paint by Penguin advances the level of difficulty by presenting a word. Click on the mouse once for each speech sound heard in the word. After six or more incorrect responses, the level of play decreases automatically.

Tasks 4-6: Pierre Penguin presents one to three speech sounds. Click on any paint can at the bottom of the screen to represent the number and order of the sounds heard. Select a different color for each different sound you hear. Use the same color for sounds that are the same. Color choices apply only to a single response; when the next speech sounds are presented, students may change the colors of paint.

Paint by Penguin continues at the given level until at least eight correct responses are provided. Paint by Penguin then advances the level of difficulty by changing the interval between sounds, eliminating auditory feedback, and increasing the number of sounds presented. After the student becomes proficient at counting and sequencing individual speech sounds, Paint by Penguin advances the level of difficulty by presenting words. After six or more incorrect responses, the level of play decreases automatically.

Task 7: Pierre presents a word containing two sounds, using a different color sponge for each sound. Pierre instructs students to rearrange the sounds into a new word. Click on the paint can colors at the bottom of the screen that correspond to the colors used by Pierre.

Paint by Penguin continues at the given level until at least eight correct responses are provided. Paint by Penguin then advances the level of difficulty by introducing more challenging sound manipulations, eliminating auditory feedback, and increasing the number of sounds in a word. After six or more incorrect responses, the level of play decreases automatically.

Scoring: correct response, incorrect response

"Click on the mouse once for each sound you hear in the word."

Task 1: Counting number of phonemes

Auditory Feedback
Student initially hears the sounds produced as he or she clicks on the mouse. As the activity progresses, auditory feedback is removed and the student counts sounds independently.

Tasks 2–3: Segmenting phonemes in words with simple and complex syllable structures

Increasing Challenge
As the activity progresses, the complexity of syllable structure and the difficulty of the phonological manipulation tasks become more challenging.

Task 4: Counting and sequencing phonemes

Time Intervals
Paint by Penguin helps students process sounds by presenting sounds at time intervals ranging from 1.0 second to .25 second.

Tasks 5–6: Segmenting and sequencing phonemes in words with simple and complex syllable structures

Continuous Scorecard
Immediate feedback is provided after each student response. The student is rewarded for each correct answer. If the student responds incorrectly, he or she is shown the correct response.

Task 7: Manipulating phonemes

Manipulation
Student learns to rearrange, delete, replace, and insert phonemes to create new words.

PESKY PARROTS

Pesky Parrots addresses blending and word closure to give the student foundational skills for successful decoding.

Primary Skills

Phonological Blending, Word Closure, Auditory and Phoneme Discrimination, Auditory Short-term Memory, Auditory Performance with Degraded Signals

Related Skills

Auditory Sequential Memory, Auditory Attention, Auditory Temporal Ordering, Following Oral Directions, Comprehension of Linguistic Concepts

Tasks

Task 1: Blending two syllables into a word (9 levels)
Task 2: Blending three syllables into a word (3 levels)
Task 3: Blending four syllables into a word (3 levels)
Task 4: Blending two phonemes into a word (3 levels)
Task 5: Blending three phonemes into a word with simple syllable structure (9 levels)
Task 6: Blending three phonemes into a word with complex syllable structure (3 levels)
Task 7: Blending four phonemes into a word with simple syllable structure (3 levels)
Task 8: Blending four phonemes into a word with complex syllable structure (9 levels)
Task 9: Word closure: multisyllabic words with final syllable omitted (3 levels)
Task 10: Word closure: multisyllabic words with initial syllable omitted (3 levels)
Task 11: Word closure: multisyllabic words with medial syllable omitted (2 levels)
Task 12: Word closure: simple syllable structure words with final phonemes omitted (3 levels)
Task 13: Word closure: simple syllable structure words with initial phoneme omitted (3 levels)
Task 14: Word closure: simple syllable structure words with medial phoneme omitted (2 levels)
Task 15: Word closure: complex syllable structure words with one phoneme of consonant blend omitted (2 levels)

Learning Variables

Blending sounds, distinguishing sounds in words, word closure, and increasing auditory memory are learning variables applied throughout the 15 tasks in Pesky Parrots. An explanation of each follows.

Blending Sounds

Pesky Parrots provides 60 levels of instruction in word, syllable, and phoneme blending, and in word-closure skills. Students begin by learning to blend two syllables into a word, and progress to learning how to blend three and four syllables and then up to four phonemes into words.

Distinguishing Sounds in Words

Pesky Parrots teaches the student to hear subtle differences in words. Initially, the student chooses from three words that do not sound alike. As the student's skills develop, the response choices become more similar. This encourages the student to listen to every sound and to make finer discriminations between words.

Word Closure

Pesky Parrots advances to teaching word-closure skills. The student learns to recognize a word when a syllable or phoneme has been omitted by filling in the missing part of the word. This skill training develops the student's awareness of sounds and word-prediction skills.

Increasing Auditory Memory

While the student develops blending and word closure skills, Pesky Parrots also helps him or her build auditory memory skills. Decoding words requires at least a two-second auditory memory span, the amount of time needed to recognize a symbol, recall the sound, and hold and process the sound in auditory memory. Pesky Parrots provides extensive practice with listening to sounds and holding them in auditory memory for gradually increasing amounts of time before blending them into words. Pesky Parrots gradually increases the time the student must hold a sound in auditory memory until the two-second goal is attained.

How to Play

Help Pirate Patch get back his stolen jewels by blending syllables and speech sounds into words and completing words by filling in missing syllables or speech sounds. If looping is enabled for a student or a group of students, Pesky Parrots will start automatically after five seconds once students log in. If looping is disabled, click on the **Parrot** icon on the Progress Chart to begin.

Tasks 1-8: The pesky parrots present two syllables that make a word. Three pictures appear on the sails of the pirate ship. When the **Speaker** icon appears on screen, click on the picture that corresponds to the word spoken by the parrots.

After three consecutive correct responses, Pesky Parrots automatically advances the level of difficulty by increasing the time between syllables and introducing more similar-sounding response choices. When the student becomes proficient blending two syllables into words, Pesky Parrots automatically advances by presenting three and then four syllables.

Pesky Parrots continues to increase in difficulty by presenting individual speech sounds, varying the complexity of

sound patterns in words, using longer presentation intervals, increasing the number of sounds presented, and varying the similarity of the response choices.

After two consecutive incorrect responses, the level of play will decrease automatically.

Tasks 9-15: The pesky parrots present the first syllable of a word and omit the second syllable. Three pictures appear on the sails of the pirate ship. Click on the picture that corresponds to the word spoken by the parrots.

After three consecutive correct responses, Pesky Parrots automatically advances the level of difficulty by increasing the number of syllables in the word. Pesky Parrots continues to advance the level of difficulty by varying the position of the omitted syllable, omitting speech sounds, and varying the complexity of sound patterns in the word

After two consecutive incorrect responses, the level of play will decrease automatically.

Scoring:  correct response  incorrect response

"Click on the picture of what the parrots are saying."

Tasks 1–3: Blending 2–4 syllables into a word

Time Intervals
The activity builds auditory memory by pausing between syllables or phonemes, first for .25 second, then 1.0 second and 2.0 seconds.

Tasks 4–8: Blending 2–4 phonemes into a word

Challenging Foils
As the activity progresses, the response choices sound more alike, challenging the student to make finer discriminations between words before responding.

Tasks 9–11: Word closure with a syllable omitted

Word Closure
Student builds word closure skills by listening to words and filling in the missing syllable or phoneme.

Tasks 12–14: Word closure with a phoneme omitted

Task 15: Word closure with one phoneme of a consonant blend omitted

Syllable Structure
As the activity progresses, the complexity of the syllable structure becomes more challenging.

HIPPO HOOPS

Hippo Hoops strengthens reading fluency and spelling as the student learns to identify and discriminate sounds, identify the position of sounds within words and recognize spelling patterns.

Primary Skills

Auditory and Phoneme Discrimination, Auditory Vigilance, Phoneme Identification, Phonological Sequencing

Related Skills

Auditory Attention, Auditory Short-term Memory, Sound-Symbol Correspondence, Following Oral Directions, Comprehension of Linguistic Concepts

Tasks

Note: Tasks 4-8 are disabled by default but can be enabled using Activity Preferences.

Task 1: Discriminating vowels in minimal pair closed syllables (30 levels)
Task 2: Discriminating vowels in minimal pair words with postvocalic /l/ (30 levels)
Task 3: Discriminating *r*-controlled vowels in minimal pair words (21 levels)
Task 4: Discriminating *ba-pa* (7 levels)
Task 5: Discriminating *sha-sa* (7 levels)
Task 6: Discriminating *ra-la* (7 levels)
Task 7: Discriminating *ma-na* (7 levels)
Task 8: Discriminating *da-ga* (7 levels)
Task 9: Recognizing diphthongs in a word (4 levels)
Task 10: Recognizing tense vowels in a word (4 levels)
Task 11: Recognizing lax vowels in a word (7 levels)
Task 12: Identifying position of a consonant phoneme in a word (24 levels)

Learning Variables

Discriminating vowels, distinguishing consonants, and recognizing sounds and spellings of vowels, and recognizing the position of consonant sounds are learning variables applied throughout the 12 tasks in Hippo Hoops. An explanation of each follows.

Discriminating Vowels

Hippo Hoops uses 155 levels of instruction to teach discrimination, phoneme identification, and phoneme sequencing skills. The student begins with practice in vowel discrimination, listening to a series of one to eight consonant-vowel-consonant (CVC) syllables. The student learns to detect a change in the vowel phoneme.

Discriminating Consonants

Hippo Hoops progresses to teaching discrimination of consonant-vowel pairs. Hippo Hoops begins with sounds that are made easier to discriminate. Acoustically modified speech is used to make critical cues more easily heard. As a student's skills develop, he or she is presented with sounds that are more difficult to discriminate.

Recognizing Sounds and Spellings of Vowels

Once consonant and vowel discrimination is mastered, Hippo Hoops teaches the student to recognize the sounds and spellings of diphthongs, tense and lax vowels in words. The student learns that certain sounds can be spelled in a number of ways.

Recognizing the Position of Consonant Sounds

Hippo Hoops has the student recognize the position of consonant sounds in words. The student identifies a sound as occurring in the beginning, middle, or end of a word.

How to Play

Score banana points by recognizing and discriminating sounds and by identifying the position of sounds within words. Build phonics skills for vowels, vowel digraphs, diphthongs, consonants, consonant digraphs and consonant blends while shooting hoops with Hakeem Hippo. Click on the ball Hakeem holds to bypass the opening instructions. If looping is enabled for a student or a group of students, Hippo Hoops will start automatically after five seconds once students log in. If looping is disabled, click on the **Hippo** icon on the Progress Chart to begin.

Tasks 1-8: Hakeem Hippo is ready to go one-on-one with the Rhino. When the whistle blows, place the cursor on the ball in the rack at the bottom of the screen. Click and hold down the mouse button and listen as Hakeem repeats one real or nonsense word. Let go of the mouse button when you hear a different word.

After three consecutive correct responses, Hippo Hoops automatically advances the level of difficulty by presenting more similar sound contrasts.

After two consecutive incorrect responses, the level of play decreases automatically.

Tasks 9-11: Hakeem Hippo and his hippo pal are ready to go two-on-two with the Rhinos. Hakeem presents a sound that corresponds to the letter or letters displayed on the banners. When the whistle blows, place the cursor on the ball in the rack, hold down the mouse button, and listen as Hakeem presents a list of words. Let go of the mouse button when you hear a word that contains the sound corresponding to the letter or letters on the banners.

After three consecutive correct responses, Hippo Hoops automatically advances the level of difficulty by introducing more challenging sound patterns, moving from diphthongs to tense vowels and to lax vowels.

After two consecutive incorrect responses, the level of play decreases automatically.

Task 12: Hakeem presents a sound that corresponds to the letter or letters displayed on the banners. Hakeem says a word. When the speaker icon appears on screen, click on the first, second, or third ball in the ball rack to indicate if the sound is heard at the beginning, middle, or end of the word.

After three consecutive correct responses, Hippo Hoops automatically increases the level of difficulty by introducing more challenging sounds.

After two consecutive incorrect responses, the level of play decreases automatically.

Scoring: correct response, incorrect response

"Let go of the mouse when you hear the /e/ sound."

Tasks 1–3: Discriminating vowels

Increasing Challenge
As the activity progresses, student discriminates between vowel pairs that sound more similar.

Tasks 4–8: Discriminating consonants in CV syllables

Acoustically Modified Speech
Computer-generated speech is used to make critical acoustic cues more easily heard.

Task 9: Recognizing diphthongs in a word

Sounds and Letters
Student learns that certain sounds can be spelled a number of different ways. These spelling patterns are reinforced.

Task 10: Recognizing tense vowels in a word

Task 11: Recognizing lax vowels in a word

Task 12: Identifying position of a consonant phoneme in a word

DUCK LUCK

Duck Luck strengthens decoding and spelling skills as the student learns to recognize, blend, and manipulate onsets (word beginnings), rimes (word endings), and phonemes.

Primary Skills

Rhyming, Phoneme Identification and Discrimination, Phonological Blending, Segmentation and Manipulation, Word Closure, Auditory Sequential and Short-term Memory, Sound-Symbol Correspondence

Related Skills

Auditory Attention, Sound-Symbol Correspondence, Auditory Short-term Memory, Phonological Sequencing, Following Oral Directions, Comprehension of Linguistic Concepts, Sight Recognition

Tasks

Task 1: Recognizing word endings: open-syllable rimes (8 levels)
Task 2: Recognizing word endings: closed-syllable rimes (55 levels)
Task 3: Recognizing word endings: rimes containing postvocalic /l/ (8 levels)
Task 4: Recognizing word endings: rimes containing *r*-controlled vowels (4 levels)
Task 5: Recognizing word beginnings: single consonants and consonant digraphs (22 levels)
Task 6: Recognizing word beginnings: CC blends (22 levels)
Task 7: Recognizing word beginnings: CCC blends (5 levels)
Task 8: Blending onsets with rimes (12 levels)
Task 9: Segmenting and deleting phonemes, onsets, and rimes (6 levels)

Learning Variables

Recognizing rhyming word endings, recognizing onset patterns, blending onsets and rimes, auditory interference and segmenting and deleting phonemes, onsets and rimes are learning variables applied throughout the nine tasks in Duck Luck. An explanation of each follows.

Recognizing Rhyming Word Endings

Duck Luck provides systematic training in recognition and spelling of common word endings. These word endings are the most frequently occurring phonological patterns in the English language.

Recognizing Onset Patterns

As the student's skills progress, Duck Luck provides practice in recognition and spelling patterns of onsets, including consonants, consonant digraphs, and consonant blends.

Blending Onsets and Rimes

Once the student masters recognition of word endings and beginnings, Duck Luck has him or her blend these onsets and rimes. The time interval between presentation of onsets and rimes gradually increases from .50 to 2.0 seconds. These changes require the student to hold the sounds in auditory memory for increasingly longer periods of time.

Auditory Interference

Duck Luck continues to challenge the student by using auditory interference between the presentation of onsets and rimes. Initially the activity presents sounds without interruption (e.g., *hot*); as the activity progresses, verbal instructions are used as auditory interference (e.g., "Which duck says a word that begins with /h/ and ends with /ot/?"). The interference requires the student to hold the initial sound in auditory memory while processing the directions.

Segmenting and Deleting Phonemes, Onsets and Rimes

After the student is able to blend onsets and rimes, Duck Luck requires the student to segment and delete all or part of the onset or rime.

How to Play

Visit the Duck Luck Arcade for some old-fashioned carnival fun as you work on rhyming and other sound-pattern recognition skills. Click on the prize arrow to bypass the opening instructions. If looping is enabled for a student or a group of students, Duck Luck will start automatically after five seconds once students log in. If looping is disabled, click on the **Duck** icon on the Progress Chart to begin.

Tasks 1-7: Lyle Crocodile presents a sound pattern corresponding to the letters displayed on the screen. Three little ducks each speak a different word. Click on the duck whose word ends with the sound pattern Lyle Crocodile presented.

After three consecutive correct responses, Duck Luck automatically advances the level of difficulty by presenting more challenging word-final sound patterns, introducing word-initial sound patterns, and varying the complexity of the word-initial sound patterns.

After two consecutive incorrect responses, the level of play decreases automatically.

Task 8: Lyle Crocodile presents two parts of a syllable (onset and rime) that make a one-syllable word. Click on the duck that says the word corresponding to the word spoken by Lyle Crocodile.

After three consecutive correct responses, Duck Luck automatically advances in difficulty by increasing the interval between parts of the word, increasing the complexity of the sound patterns within the word, and introducing interference between the two parts of the word.

After two consecutive incorrect responses, the level of play decreases automatically.

Task 9: (6 Levels of Play) Lyle Crocodile presents a word with a sound removed. Click on the duck that says the word that corresponds with the word spoken by Lyle Crocodile.

After three consecutive correct responses, Duck Luck automatically advances the level of play by varying the complexity of the sound patterns within a word and by varying the type of sound manipulation.

After two consecutive incorrect responses, the level of play decreases automatically.

Scoring: correct response, incorrect response

"Which duck says a word that ends with 'ack'?"

Tasks 1–4: Recognizing word endings

Tasks 5–7: Recognizing word beginnings

Task 8: Blending onsets with rimes

Time Intervals
Duck Luck builds auditory memory by pausing between onsets and rimes for .5 second and works systematically up to 2.0 seconds.

Task 9: Segmenting and deleting phonemes, onsets, and rimes

Increasing Challenge
As the activity progresses the tasks and complexity of the syllable structure become more challenging.

EAROBICS STEP 2 LEARNING OBJECTIVES

The following learning objectives appear on the Reporting screen. They are written in standard Individualized Education Plan (IEP) format to help educators keep records and create reports. When writing IEP goals, use these learning objectives as a framework and customize them for each student. Objectives for each activity are listed in the order presented during play.

Calling All Engines

Task 1: Using auditory memory for digits (10 levels)

Objective: The student will recall in order one, two, three, four or five digits presented one second apart. Display of nine response choices will be simultaneous or delayed.

Task 2: Following directions: digits and linguistic concepts (20 levels)

Objective: The student will follow directions containing a linguistic concept and requiring identification of digits. Display of nine response choices will be simultaneous or delayed. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Task 3: Following directions: digits, linguistic concepts, and competing noise (6 levels)

Objective: The student will follow directions containing randomly selected linguistic concepts and requiring identification of digits. Display of nine response choices will be simultaneous or delayed and no, low or high background noise will be present. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Task 4: Using auditory memory for words (8 levels)

Objective: The student will recall in order of presentation one, two, three or four words auditorily presented. Display of response choices will be simultaneous or delayed.

Task 5: Following directions: words and linguistic concepts (20 levels)

Objective: The student will follow directions containing a linguistic concept and requiring identification of words represented by pictures. Display of response choices will be simultaneous or delayed. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Task 6: Following directions: words, linguistic concepts, and competing noise (6 levels)

Objective: The student will follow directions containing a randomly selected linguistic concept and requiring identification of words represented by pictures. Display of nine response choices will be simultaneous or delayed and no, low or high background noise will be present. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Task 7: Using auditory memory for long vowel phonemes (8 levels)

Objective: The student will recall in order of presentation one, two, three or four long vowel sounds presented auditorily. Display of response choices will be simultaneous or delayed.

Task 8: Following directions: long vowel phonemes and linguistic concepts (20 levels)

Objective: The student will follow directions containing a linguistic concept and requiring identification of long vowel sounds represented by corresponding graphemes. Display of response choices will be simultaneous or delayed. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Task 9: Following directions: long vowel phonemes, linguistic concepts and competing noise (6 levels)

Objective: The student will follow directions containing a randomly selected linguistic concept and requiring identification of long vowel phonemes represented by corresponding graphemes. Display of response choices will be simultaneous or delayed and no, low or high background noise will be present. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before... after...* .

Task 10: Using auditory memory for short vowel phonemes (8 levels)

Objective: The student will recall in order of presentation one, two, three or four short vowel sounds presented auditorily. Display of response choices will be simultaneous or delayed.

Task 11: Following directions: short vowel phonemes and linguistic concepts (20 levels)

Objective: The student will follow directions containing a linguistic concept and requiring identification of short vowel sounds represented by corresponding graphemes. Display of response choices will be simultaneous or delayed. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Task 12: Following directions: short vowel phonemes, linguistic concepts, and competing noise (6 levels)

Objective: The student will follow directions containing a randomly selected linguistic concept and requiring identification of short vowel phonemes represented by corresponding graphemes. Display of response choices will be simultaneous or delayed and no, low or high background noise will be present. The set of linguistic modifiers consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Task 13: Auditory memory for consonant phonemes (8 levels)

Objective: The student will recall in order of presentation one, two, three or four consonant sounds presented auditorily. Display of response choices will be simultaneous or delayed.

Task 14: Following directions: consonant phonemes and linguistic concepts (22 levels)

Objective: The student will follow directions containing a linguistic concept and requiring identification of consonant sounds represented by corresponding graphemes. Display of response choices will be simultaneous or delayed. The set of linguistic concepts consists of *and, or, not, first, last, middle, ...before, ...after, before..., after...* .

Paint by Penguin

Task 1: Counting number of phonemes (12 levels)

Objective: The student will identify the number of phonemes (one, two, three, four, or five) presented auditorily. The phonemes will be separated by 1.0, 0.5 or 0.25 seconds. Simultaneous auditory feedback will or will not be provided during response.

Task 2: Segmenting phonemes in a word with simple syllable structure (6 levels)

Objective: The student will identify the number of phonemes (two, three, four, or five) in a word with simple syllable structure presented auditorily. Simultaneous auditory feedback will or will not be provided during response.

Task 3: Segmenting phonemes in a word with complex syllable structure (4 levels)

Objective: The student will identify the number of phonemes (three, four, or five) in a word with complex syllable structure presented auditorily. Simultaneous auditory feedback will or will not be provided during response.

Task 4: Counting and sequencing phonemes (12 levels)

Objective: The student will identify the number and sequence of phonemes (one, two, three, four, or five) presented auditorily. The phonemes will be separated by 1.0, 0.5 or 0.25 seconds. Simultaneous auditory feedback will or will not be provided during response.

Paint by Penguin (cont.)

Task 5: Segmenting and sequencing phonemes in a word with simple syllable structure (6 levels)

Objective: The student will identify the number (two, three, four, or five) and sequence of phonemes in an auditorily presented word with simple syllable structure. Simultaneous auditory feedback will or will not be provided during response.

Task 6: Segmenting and sequencing phonemes in a word with complex syllable structure (4 levels)

Objective: The student will identify the number (three, four, or five) and sequence of phonemes in an auditorily presented word with complex syllable structure. Simultaneous auditory feedback will or will not be provided during response.

Task 7: Manipulating phonemes (24 levels)

Objective: Given a series of two, three, or four phonemes that form a word, the student will manipulate the phonemes to create a new word or nonsense word. Simultaneous auditory feedback will or will not be provided during response.

Pesky Parrots

Task 1: Blending two syllables into a word (9 levels)

Objective: The student will blend two syllables 0.25, 1.0 or 2.0 seconds apart and will select from a set of three response choices. The choices will contain zero, one or two foils (words that are perceptually similar to the target word).

Task 2: Blending three syllables into a word (3 levels)

Objective: The student will blend three syllables 0.25, 1.0 or 2.0 seconds apart and will select from a set of three response choices.

Task 3: Blending four syllables into a word (3 levels)

Objective: The student will blend four syllables 0.25, 1.0 or 2.0 seconds apart and will select from a set of three response choices.

Task 4: Blending two phonemes into a word (3 levels)

Objective: The student will blend two phonemes 0.25, 1.0 or 2.0 seconds apart and will select from a set of three response choices.

Task 5: Blending three phonemes into a word with simple syllable structure (9 levels)

Objective: The student will blend three phonemes 0.25, 1.0 or 2.0 seconds apart into a word with simple syllable structure and will select from a set of three response choices. The choices will contain zero, one or two foils (words that are perceptually similar to the target word).

Task 6: Blending three phonemes into a word with complex syllable structure (3 levels)

Objective: The student will blend three phonemes 0.25, 1.0 or 2.0 seconds apart into a word with complex syllable structure and will select from a set of three response choices.

Task 7: Blending four phonemes into a word with simple syllable structure (3 levels)

Objective: The student will blend four phonemes 0.25, 1.0 or 2.0 seconds apart into a word with simple syllable structure and will select from a set of three response choices.

Task 8: Blending four phonemes into a word with complex syllable structure (9 levels)

Objective: The student will blend four phonemes 0.25, 1.0 or 2.0 seconds apart into a word with complex syllable structure and will select from a set of three response choices. The choices will contain zero, one or two foils (words that are perceptually similar to the target word).

Task 9: Word closure: multisyllabic words with final syllable omitted (3 levels)

Objective: When auditorily presented with a sequence of two, three or four syllables that form a word from which the final syllable has been omitted, the student will identify the word by selecting from a set of three choices.

Task 10: Word closure: multisyllabic words with initial syllable omitted (3 levels)

Objective: When auditorily presented with a sequence of two, three or four syllables that form a word from which the initial syllable has been omitted, the student will identify the word by selecting from a set of three choices.

Task 11: Word closure: multisyllabic words with medial syllable omitted (2 levels)

Objective: When auditorily presented with a sequence of three or four syllables that form a word from which the medial syllable has been omitted, the student will identify the word by selecting from a set of three choices.

Task 12: Word closure: simple syllable structure words with final phonemes omitted (3 levels)

Objective: When auditorily presented with a sequence of two, three or four phonemes that form a word with simple syllable structure, from which the final phoneme has been omitted, the student will identify the word by selecting from a set of three choices.

Task 13: Word closure: Identifying simple syllable structure words with initial phoneme omitted (3 levels)

Objective: When auditorily presented with a sequence of two, three or four phonemes that form a word with simple syllable structure, from which the initial phoneme has been omitted, the student will identify the word by selecting from a set of three choices.

Task 14: Word closure: Identifying simple syllable structure words with medial phoneme omitted (2 levels)

Objective: When auditorily presented with a sequence of three or four phonemes that form a word with simple syllable structure, from which the medial phoneme has been omitted, the student will identify the word by selecting from a set of three choices.

Task 15: Word closure: Identifying complex syllable structure words with one phoneme of consonant blend omitted (2 levels)

Objective: When presented with a sequence of three or four phonemes that form a word with complex syllable structure, from which one segment of the CC cluster has been omitted, the student will identify the word by selecting from a set of three choices.

Hippo Hoops

Note: Tasks 6-8 are disabled by default but can be enabled using Activity Preferences.

Task 1: Discriminating vowels (30 levels)

Objective: The student will discriminate a change in the vowel sound of minimal pair closed (CVC) syllables presented one second apart.

Task 2: Discriminating vowels in minimal pair words with postvocalic /l/ (30 levels)

Objective: The student will discriminate a change in the vowel sound of minimal pair CVC syllables with postvocalic /L/ presented one second apart.

Task 3: Discriminating *r*-controlled vowels (21 levels)

Objective: The student will discriminate a change in the vowel sound of minimal pair CVC syllables with *r*-controlled vowels 1.0 second apart.

Task 4: Discriminating *bah-pah* (7 levels)

Objective: In an auditory vigilance task, the student will discriminate a change in the consonant phoneme of minimal pair CV syllables when the CV syllables are presented 1.0 seconds apart. The interphonemic acoustic difference in voice onset time and the perceptual saliency of the difference between the consonant phonemes is gradually reduced from eight steps to two steps.

Task 5: Discriminating *shah-sah* (7 levels)

Objective: In an auditory vigilance task, the student will discriminate a change in the consonant phoneme of minimal pair CV syllables when the CV syllables are 1.0 seconds apart. The interphonemic acoustic difference in spectrum of frication and the perceptual saliency of the difference between the consonant phonemes is gradually reduced from eight steps to two steps.

Task 6: Discriminating *rah-lah* (7 levels)

Objective: In an auditory vigilance task, the student will discriminate a change in the consonant phoneme of minimal pair CV syllables when the CV syllables are 1.0 seconds apart. The interphonemic acoustic difference in onset formant frequency and the perceptual saliency of the difference between the consonant phonemes is gradually reduced from eight steps to two steps.

Task 7: Discriminating *mah-nah* (7 levels)

Objective: In an auditory vigilance task, the student will discriminate a change in the consonant phoneme of minimal pair CV syllables when the CV syllables are 1.0 seconds apart. The interphonemic acoustic difference in onset formant frequency and the perceptual saliency of the difference between the consonant phonemes is gradually reduced from eight steps to two steps.

Task 8: Discriminating *dah-gah* (7 levels)

Objective: In an auditory vigilance task, the student will discriminate a change in the consonant phoneme of minimal pair CV syllables when the CV syllables are 1.0 seconds apart. The interphonemic acoustic difference in onset formant frequency and the perceptual saliency of the difference between the consonant phonemes is gradually reduced from eight steps to two steps.

Task 9: Recognizing diphthongs in a word (4 levels)

Objective: The student will recognize a diphthong in words auditorily presented 2.0 seconds apart.

Task 10: Recognizing tense vowels in a word (4 levels)

Objective: The student will recognize a tense vowel sound in words auditorily presented 2.0 seconds apart.

Task 11: Recognizing lax vowels in a word (7 levels)

Objective: The student will recognize a lax vowel sound in words auditorily presented 2.0 seconds apart.

Task 12: Identifying position of a consonant (24 levels)

Objective: The student will recognize the position of a consonant sound in an auditorily presented word.

Duck Luck

Task 1: Recognizing word endings: open-syllable rimes (8 levels)

Objective: When auditorily presented with an open-syllable rime, the student will select a word containing the same rime from three choices.

Task 2: Recognizing word endings: closed-syllable rimes (55 levels)

Objective: When auditorily presented with a closed-syllable rime, the student will select a word containing the same rime from three choices.

Task 3: Recognizing word endings: rimes containing postvocalic /l/ (8 levels)

Objective: When auditorily presented with a rime containing post-vocalic /l/, the student will select a word containing the same rime from three choices.

Task 4: Recognizing word endings: rimes containing *r*-controlled vowels (4 levels)

Objective: When auditorily presented with a rime containing an *r*-controlled vowel, the student will select a word containing the same rime from three choices.

Task 5: Recognizing word beginnings: single consonants and consonant digraphs (22 levels)

Objective: When auditorily presented with a single consonant or consonant digraph onset, the student will select a word containing the same onset from three choices.

Task 6: Recognizing word beginnings: CC blends (22 levels)

Objective: When auditorily presented with a CC blend onset, the student will select a word containing the same onset from three choices.

Task 7: Recognizing word beginnings: CCC blends (5 levels)

Objective: When auditorily presented with a CCC blend onset, the student will select a word containing the same onset from three choices.

Task 8: Blending onsets with rimes (12 levels)

Objective: When auditorily presented with an onset (word beginning) followed by a rime (word ending) separated by 0.5, 1.0 or 2.0 seconds, the student will blend the onset and rime into a word by selecting from three choices. Auditory interference will or will not be presented.

Task 9: Segmenting and deleting phonemes, onsets, and rimes (6 levels)

Objective: When auditorily presented with a word and instructions to delete either all or part of the onset or rime, the student will choose the correct word from a set of three choices.