PLAYFUL WORDS

Family Learning Coach Handbook

Welcome Coaches!

What is the coaching handbook?

The Coach Handbook is a guidebook full of resources for everything related to Family Learning Coaches. There are three sections: 1) The Playful Words Approach, where we we introduce our research project and the guiding pricniples of our apprach; 2) Family Learning Coach, where we define the roles of a Coach; and 3) Coach Console Guides and Resources, which offers examples to guide coaches on using the Coach Console. This handbook is a work-in-progress, so we encourage you to share any feedback on how we can improve it! We look forward to working with you!

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PLAYFUL WORDS

Guiding Principles of Playful Words

At Playful Words, our aim is to develop playful, child-driven literacy learning experiences for children and families. Our work is inspired by theorists like Seymour Papert, Maria Montessori, and Lev Vygotsky. To give you a better understanding of the Playful Words approach, we will highlight some of our guiding principles (Playful Learning, Social Learning, Scaffolded Learning, and Play Analytics), and explain how they have informed our work.

1 Playful Learning

The central driving force of children's learning is curiosity, the innate drive to learn about the world and one's self. We seek to design fun, engaging experiences that tap into each child's natural instincts to play and explore, while guiding children towards learning outcomes.

Computers and networks today are often used to automate instruction-based education. Khan Academy and DuoLingo are exemplary. However, in addition to instruction-drill-and-practice, computers can enable fundamentally different modes of learning. In 1980, Seymour Papert envisioned a reversal of roles between the child and the computer:

"In many schools today, the phrase 'computer-aided instruction' means making the computer teach the child. One might say the computer is being used to program the child. In my vision, the child programs the computer and, in doing so, both acquires a sense of mastery over a piece of the most modern and powerful technology and establishes an intimate contact with some of the deepest ideas from science, from mathematics, and from the art of intellectual model building." [1]

A critical element of Papert's thinking — influenced by his work with Piaget — is that primary agency in the learning process should remain with the child, enabling the child to construct his or her own intellectual structures. Papert emphasized the importance of the child's cultural environment in providing the "building materials"

for these intellectual structures. He envisioned computers as a fundamentally new material for learners, akin to paint for artists. His vision led to Turtle geometry and LOGO, and under the leadership of Mitch Resnick, the widely used programming language Scratch [2].

Building on our previous experience in using large-scale data analytics to understand child language development combined with Papert's guiding ideas, our team at the MIT Laboratory for Social Machines is designing tools for children to develop skills in self-expression, literacy, and dialog through the natural mediums of written language, pictures, and stories that are evolved for person-to-person

2 Social Learning

We believe that literacy is an inherently social activity. The role of parents and other guardians, of peers, and others that form a child's most intimate social network is critical to the child's development [3; 4]. The younger the child, the more important these dependencies become. Although learning technologies have unique affordances, research continuously demonstrates that technology alone is not enough, and can lead to a larger achievement gap unless app creators acknowledge the critical role that parents and other adults play as guides and role models [5]. Educational apps designed for parent-child dyads have the potential to empower parents to engage in their child's learning process [6].

Our current approach focuses on three main players: the child, parent, and coach. As part of the home-based study with SpeechBlocks, we developed a new role, that of a Family Learning Coach. The job of the coach is to establish a relationship with the child, his/her parent, and support the parent in understanding and contextualizing their children's learning process on SpeechBlocks in order to empower parents to co-engage with their children. Coaches communicate with parents via short text message updates about children's progress through play, and communicate with the child sending new words (based on child's past play) back to the child's SpeechBlocks app. The coach also suggest relevant activities for parents and children to do together to reinforce what the child is exploring in SpeechBlocks. Thus, this coach-in-the-loop system is designed to encourage child-driven, playful learning that includes the child's learning community.

3 Play Analytics

Montessori's pedagogy requires constant observation and analysis of children to guide individual development [7]. We embrace this idea, and aim to develop and leverage data-driven AI/machine learning tools to augment human observation and analysis. We see immense potential for revealing insights of a child's developmental trajectory and proclivities grounded in rich, longitudinal, behavioral data. These insights may provide the basis for machine-guided human learning.

We are developing methods to analyze and visualize play traces to help human analysts see intentional higher level patterns. For SpeechBlocks, we have found this visualization of play traces, called PlayTrees, useful for quickly finding words/ sequences created by a child, and seeing how they were constructed (left to right, right to left, reassembled from other existing words, etc.). We are now developing automated methods for distinguishing letter sequences that appear to be attempts to spell real words (but are spelled incorrectly) vs. nonsense yet pronounceable letter sequences vs. utterly unpronounceable sequences such as clusters of consonants.

We have developed the Coach Console, powered by play analytics, which enables a coach to rapidly inspect play traces collected from a child's activity and pull out their salient achievements, or meaningful moments. The coaches then translate these moments into short personalized messages for the parent to inform them on their child's progress and provide suggestions for how to encourage new activities using SpeechBlocks, together with background knowledge about their child's path to literacy.

4 Scaffoleded Learning

According to Vygotsky, learning largely happens within the Zone of Proximal Development (ZPD) -- a range of skills that the child hasn't yet mastered on her/ his own, yet can perform with some amount of help. The opportunities for such learning frequently arise in the process of self-directed play, as the child often sets up goals beyond his/her current reach. Supporting the child in achieving such goals is important for maintaining their interest and engagement with the system [3].

Guiding the child through an open-ended play (instead of forcing our agenda on her/him) is an interesting design challenge which we divide into two

subproblems: (1) getting to know what the child's interests and goals actually are, and (2) providing subtle but helpful hints for achieving these goals. Coaches address these subproblems by: (1) analyzing trends in play data and identifying the child's intentions or personal learning goals through play, and (2) suggesting words directly to the child's device that are based on trends in the child's play data in order to expand the child's sphere of exploration.

These suggested words are often words that the child tried to spell or new sound patterns that the coach prompts the child to explore based off of their past play (e.g. if the child makes "cap", the coach could suggest the word "cape", which encourages the child to use a silent "e"). These coach-suggested words are based on previous research and best practices in phonics-based instruction, including practices employed by Montessori teachers. When a suggested word is sent to the child's device, SpeechBlocks uses scaffolding by helping the children sound out and construct the suggested word, rather than just giving them the completed word.

Introduction to Speechblocks

What is SpeechBlocks?

      SpeechBlocks is an open-ended literacy app for young children to explore letter-to-sound mappings by constructing and deconstructing letter blocks. Rather than the typical drill-and-practice of most early learning apps, SpeechBlocks transforms the smartphone into a playful, open-ended, expressive medium for children. Letter blocks can be combined and pulled apart using natural gestures. Each interaction has immediate feedback, so every time a new letter combination is formed (merge), broken apart (split), or tapped, the sequence is spoken aloud by a speech synthesizer.

      There are no right or wrong constructions, and children can create real or nonsense ("silly") words. Pre-formed words are stored in the word drawer on the left, and individual letters are stored in the bottom letter drawer. Words and letters can be dragged from a drawer onto the canvas for letter manipulation. New words/sequences constructed by the child can be dragged to the word drawer and saved. These words become personally meaningful objects for the child [8].
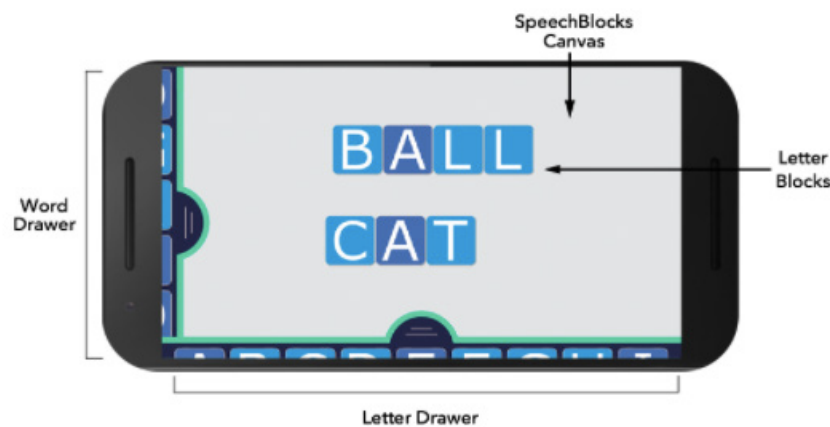
SpeechBlocks as a Smart, Expressive Medium

SpeechBlocks is an *expressive* medium which allows a child to play with letters and sounds, to make "silly" words, and to create and save personally meaningful words.

We also refer to SpeechBlocks as a *smart* medium for two reasons: it is responsive, and it remembers. SpeechBlocks is a *responsive* medium in that as a person constructs letter sequences, the medium responds with speech. Automated letter-to-phoneme translation following the rules of English is the medium's responsive behavior. SpeechBlocks remembers in the sense that all interactions with the medium are recorded at fine granularity with time stamps. Collection of longitudinal data enables analysis of child behavior, abilities, trends, and learning trajectories.
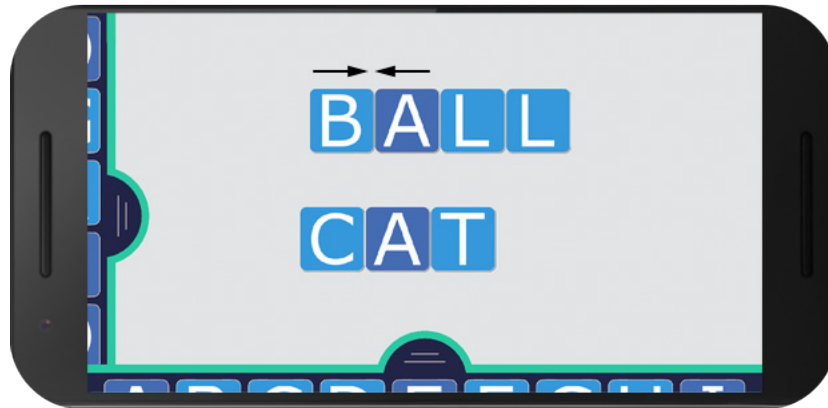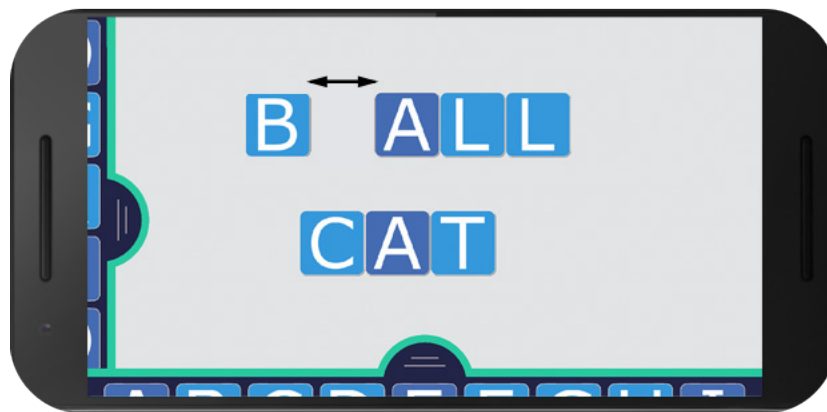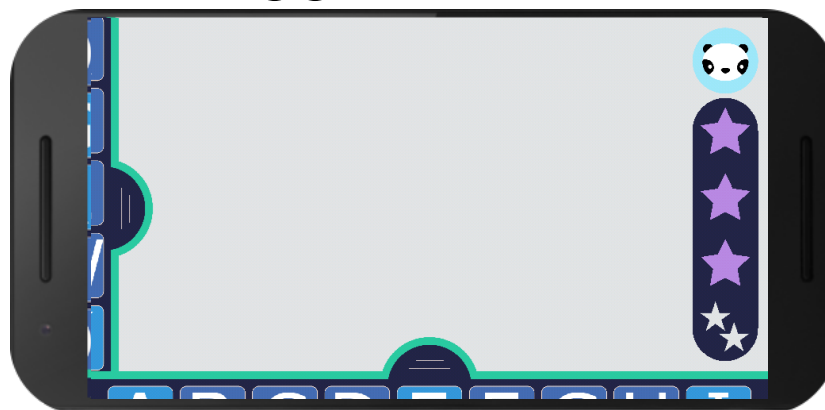
Letter Drawer

Word Drawer
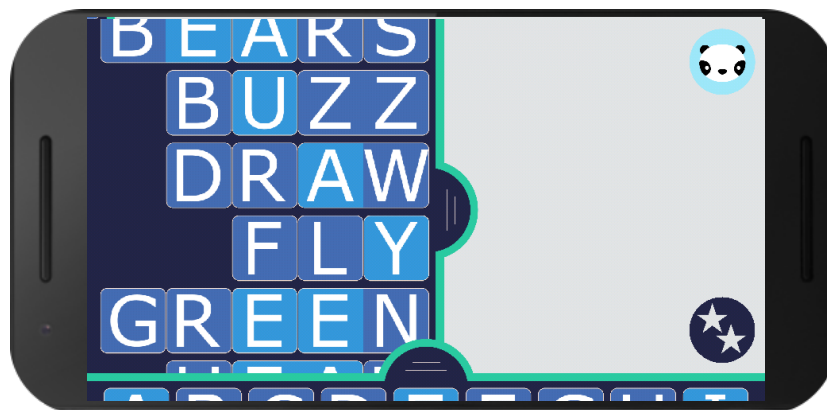
Merge

Split

Suggested Words

Each star represents a suggested word

Literacy Development with SpeechBlocks

Summary

Literacy is defined as the ability to read and write. But reading and writing are multi-component processes, meaning that there are multiple components, or processes that occur in the brain while one reads and writes. The 5 main components are: phonological processes, orthographic processes, morphological processes, semantic processes, and syntactic processes. For the purpose of SpeechBlocks, we will focus on the first three.

Phonological Processing and SpeechBlocks

Phonological processes are the rule systems that govern how particular speech sounds are used to produce meaningful words. Phonological skills are our ability to hear, discriminate, segment, and connect the sounds of oral language. Using phonological processes is not merely recognizing a list of sounds, but understanding a system of possible sound combinations and sound placements in words (being able to understand what sounds go where in a word). English uses an alphabetic writing system in which the letters, single and in combination, represent single speech sounds. People who can break apart words into sounds, recognize their identity, and put them together again have the foundational skills necessary for using the alphabetic principle. Early phonological skills predict later outcomes in reading, spelling, and vocabulary.

SpeechBlocks allows children to explore the phonetic rules of the English language. As a child constructs, segments, and remixes letter strings, the auditory feedback pronounces the phonemes, rather than the letter names. This exposes children to letter-to-sound mappings, which may strengthen their phoneme-grapheme correspondence skills. Additionally, since you can make any real or nonsense words in SpeechBlocks, children can play with different letter and sound combinations, and even hear how the sound of one letter changes when it is combined with another letter (such as the "g" in "rag" versus "rage").

Orthographic Processing and SpeechBlocks

Orthography is the conventional spelling system of a language. Orthographic processing refers to the knowledge of how sounds are mapped to the symbols (letters), and occurs when the brain uses the visual system to form, store, and recall letters and letter patterns to form words. Understanding orthography helps us grow the capacity to recognize "chunks" with great speed and accuracy, a major characteristic of fluent readers. Reading fluency depends on students "overlearning" the most common letter patterns until they are recognized automatically. English can be especially difficult because it has an opaque orthography, or writing system (i.e. an inconsistency between phonology and orthography).

Children engage in orthographical processes in every interaction they have in SpeechBlocks (building, deconstructing, and remixing letters to form words). Children can try to spell out any words they like, using the letter symbols to sound out new words, which may sometimes result in invented spelling, rather than the conventional English spelling of words. However, invented spellings demonstrate an awareness of letter-to-sound mappings, and with the suggested words feature in SpeechBlocks, the child is developing orthographic skills by spelling new words as the device helps them sound it out.

Morphological Processing and SpeechBlocks

Morphology relates to the structure or parts of words (stems, roots, prefixes) and the patterns of word formations (inflection, derivation, composition) in a particular language. Morphological awareness supports word identification and semantic knowledge, and longitudinal data shows a significant correlation between morphological processing and decoding, vocabulary, and reading comprehension [9; 10].

When children remix words or make rhyming words in SpeechBlocks, they focus on the stem of the word. Similarly, children can preserve the root of any word and add other letters to make plurals, add prefixes or suffixes, create multi-syllabic words, or change the word form. This repeated exposure through play has the potential to help strengthen morphological awareness. Additionally, when children make certain digraphs (e.g. ch, sh) or affixes (e.g. un-, -tion), they are shown as one block (even though they can still be broken apart). This slight animation can bring awareness to common patterns of word formations.

Other Ways to Learn Literacy through SpeechBlocks

Literacy learning is more complex than just the cognitive processes listed above. Factors related to psychology, developmental stage, and social-emotional development are also important components to supporting children's literacy development. Below are some other ways that SpeechBlocks can help children learn literacy skills in fun ways, such as:

1. Increasing motivation and self-efficacy by being able to create and save personally meaningful words;
2. Letting kids freely explore with letter-to-sound mappings of English by making silly words and hearing them read aloud;
3. The open-ended nature of the app allows kids can make up their own games with SpeechBlocks;
4. Increasing opportunities for children to express themselves with words and tell stories; and
5. Increasing feelings of confidence and encouraging social collaboration by working with others to create words in SpeechBlocks.

Goals and Roles of a Coach

Important Notes

As you think about your role as a coach, remember that you are representing Playful Words. The Playful Words appraoch follows a play-based, constructionist approach to learning, and you should try to use this lens when interacting with the children and families. You can go back to the Guiding Principles of Playful Words section on page 2 for a more in-depth explanation.

What is the goal of a Family Learning Coach?

The goal of a coach is to promote children's literacy development through play and support family engagement in the child's learning process.

In order to achieve this goal, the coach must form a positive and trusting relationship with the family, have background knowledge of children's literacy development, and align with a more "constructionist" and playful definition of learning rather than a prescriptive definition of learning.

What is the role of a Family Learning Coach?

For SpeechBlocks specifically, the main role of the coach is to support the family in understanding and contextualizing their children's learning process on an open-ended learning app (SpeechBlocks) in order to empower parents to co-engage with their children.

In order to fulfill this role, we have identified several responsibilities for coaches, as well as tools a coach can use to execute their responsibilities in the next section. We have also detailed the proposed commitments required for coaches.

Responsibilities of a Family Learning Coach

In order to fulfill this role, we have identified several responsibilities of coaches. These responsibilities are separated into four main sections: building a positive relationship with families, maintaining communication with families, using the coach console, and connecting with coach coordinators.

① Build a positive, trusting relationship with families.

It is important to remember that the relationship of the family and coach extends beyond the digital space, and communicating about personal experiences and home environments in order to contextualize the play and the updates requires a level of intimacy that can only grow from taking great care in building a trusting relationship.

- Connect with the families in-person at the pre- and post- workshops.
- Make sure to listen to families. You can share about yourself as much as you feel comfortable, but make sure not to dominate the conversation. Let them know why they can trust you.
- Create a safe space for families to share information with you, and make sure to maintain a level of professional privacy/confidentiality.
- A huge part of building and maintaining a positive relationship is communication (see responsibilities below).

② Maintain positive, responsive communication with families.

Without a strong relationship between coaches and families, families may not feel as invested in communicating with the coaches, and that communication is key to a successful coach-in-the-loop system.

- Communicate with the families regularly during the phone check-ins, or via SMS/text message during updates or other back-and-forth communication.
- Be responsive and polite to families.
- Use positive, appropriate language.

- Use process-based language and person-first language when communicating with families. Emphasize the positive power of play.
- Do not shame families, use foul/disrespectful language, or "talk down" to them in any way.
- Ask families questions or for clarification and/or feedback.
- Even though your title is "coach", remember that they are the "expert" in terms of their family unit, and you are there for support and guidance related to their children's play on SpeechBlocks, but you are not their teacher. Ask them their opinions, thoughts, ideas, and feedback.
- This can help give visibility into their home context in order to write better updates related to their child's play.
- Admit mistakes and/or share uncertainty.
- This is a human-in-the-loop system, and it is better to apologize when you make a mistake. People tend to feel closer to you when you make a human error.
- If a family asks you a question and you are unsure of the answer, don't be afraid to say "I am unsure". You can always reach out to a Coach Coordinator, just make sure you follow back up with the family.

3 Use the Coach Console to analyze play, compose and send updates, and suggest words.

The coaching console is a tool that is designed for the coaches to use that helps augment the analytic abilities of the coach in order to help them analyze and compose updates to families, as well as suggest new words for children to expand their sphere of exploration. By using this tool, the coach is able promote children's literacy by connecting with the child, and support family engagement by bringing a new level of visibility into children's learning process through play.

Analyze Play
- Use PlayTrees to find meaningful moments in children's play.
- Pay attention to not only what words children make, but also how they make them. The process is often more revealing than the end result.
- Use the goals to help understand children's play and keep track of important milestones.
- Look for patterns overtime to see progress, favorite words, interests, etc.
- When you find a meaningful moment, think about what it represents in the child's literacy development. But remember to keep it playful! Many children learn from just putting random letters together and hearing the sounds they make.

Suggest Words and Prompts for Child

- Based on child's play, you can suggest a word that they may like, may need extra scaffolding trying to make, and/or may help introduce them to a new type of wordplay that may or may not relate to a goal.
- Make sure the word is related to child's play, interests, and skill level.
- Write a short prompt (150 characters) related to the suggested words that inspires the child to make up their own words.
- For example, if child keeps making CAP and you want them to explore with a silent -e, send them the word CAPE and write a prompt that says, "When you add an E to the end of the word CAP, it changes the middle sound into CAPE. Try adding an E to other words you've made to see how the middle sound changes!"
- Make sure to delete old suggested words once the child has completed them or if they have been on the device for a long time and are not being made or used.

Comopse and Send Updates to Families

- Choose a category of the nature of wordplay (e.g., invented spelling, common sounds, etc.)
- Write a short, 1-2 sentence update (250 characters) to families (usually the parent) about a meaningful moment in the child's play over the last couple days.
- Make sure to use process-based language, but keep language simple (no complex literacy-related terms).
- Frame updates positively and emphasize the importance of play and exploration.
- You can use the sentence prompts as guides.
- Once a week, include a suggested activity that the parent and child can do together, based on the child's past play.
- Activities can be done with multiple family members if there are siblings in the study.
- If child has not played in 7 consecutive days, complete a "Lack of Activity" update, and suggest an activity.
- Look at past updates to vary the type of updates sent to the parent (depending on play).
- Put correct names and words made in each update. Double check before sending.
- Check off if the update contains an activity. Check off if the update contains a suggested goal.
- NOTE: we do NOT want to use the language of "goals" to the families, since these are more just suggestions to help expand play, rather than specified benchmarks that must be achieved.

- Reference if an update will be sent along with a suggested word or prompt that is sent to the child's device.
- When you send the update, confirm that you are ready to send. It will send as a text/SMS message to the parent's phone.

4 Connect with coach coordinators and support fellow coaches.

In order for this coaching system to work, we must embody the trusting and supportive community among the coaches that we hope to build with the families. Therefore, Juliana and Anneli will act as Coach Coordinators. They will have weekly check-ins with all coaches, offer support, and learn from coaches' feedback in order to improve the process and refine the role of a coach.
- Attend bi-weekly coach network meetings facilitated by the coach coordinators.
- Share feedback, frustrations, issues, successes, etc.
- Reach out to the Coach Coordinators or other coaches with questions, verifications, or issues through the Coach Facebook group.
- Provide feedback on the entire coaching process.
- Be open and honest about anything that does not feel right, or any conflicts in terms of time commitments.

Coach Time Committment

Pre and Post Study:
- Coach Training (8 hours)
- Attend 2 pre-workshops and 2 post-workshop celebrations (4 hours)
- Pre- and post-coach suveys (15 min/survey)
- Coach exit interview (20 minutes)

During Study:
- Analyze play, create updates, activities, and suggested words up to 3 times per week, given child's play (<30 min/child/week)
- Conduct two parent phone check-ins (15 min/check-in)
- Attend bi-weekly online coach coordinator check-ins (10 min/check-in)

Family-Coach Ratio:
- 6 families per 1 coach (dependent on family size and participation rates)

Coach Code of Conduct

Communicating with families

- I will use process-based feedback to communicate updates in clear, appropriate language that emphasizes the value of the process, rather than focusing on an end result.
    - I will provide honest feedback in the form of positive praise and/or constructive suggestions to the children and families I serve in a manner beneficial to their overall learning.
    - I will not use any inappropriate language or language that is condescending or belittling.
- I will be responsive to the families I coach, and reply to them in a timely, respectful manner.

Maintaining family-coach relationships

- I understand my relationship to each family I coach is professional, and while I may form personal connections with these families, I will not overstep my professional boundaries.
    - I will not be social media friends with the families I coach.
    - I will not contact the families I coach outside of the communication related to SpeechBlocks.
- If I feel that a family I am coaching is overstepping the bounds of professionalism, I will let the Coach Coordinator know immediately.
- I will respect and be sensitive to each family's cultural background and personal value system; keeping in mind their personal dignity.
    - I will respect each child's and family's personal dignity at all times.
- I will commit to being reliable, understanding that consistency is important to building a supportive relationship with children and families.
    - I will be on time for coaching appointments (e.g. parent and coach checkins).

Communicating with the Coach Coordinator and Coach Network

- I will share any concerns I have with the Coach Coordinator.
  - I recognize I may not know how to respond to each situation, understand each play session, or have answers to every question asked. Therefore, I will seek assistance from the Coach Coordinators and/or other coaches when needed.
- I will keep all information families share with me confidential, but may share information with other coaches, but will not use names or other identifiers with other coaches.
  - I understand that I am able to share families' personal information with Coach Coordinators, as they have access to families' de-anonymized information already.
- I will share my feedback and opinions with the Coach Coordinators and other study personnel about how to improve the coaching system, tools, and coaching experience.
  - I will maintain accurate records of coaching sessions on the coaching console and any coaching surveys.
  - If I am unable to fulfill my coaching responsibilities for any reason, I will communicate with the Coach Coordinator.

These guidelines are inspired by the National Tutoring Association Code of Ethics [11].

How-To Guide: Using the Coach Console

Coach Console

The Coach Console is a tool for coaches to analyze play, monitor progress, suggest words and prompts, write updates and activities, communicate with your families (via text and phone), and access a digital resources like this Handbook. The Console is available on mobile and desktop, so you can access is anywhere by logging on! Make sure to acknowledge that it is on mobile and desktop!

Home Screen

1. This is the initial screen after the coach signs into the console. There is a list of all the families that the coach works with and shows the coach if there are any notifications from their families. Families are grouped together, with parents on top and the participating children/siblings underneath.

Coach Profile

New parent message
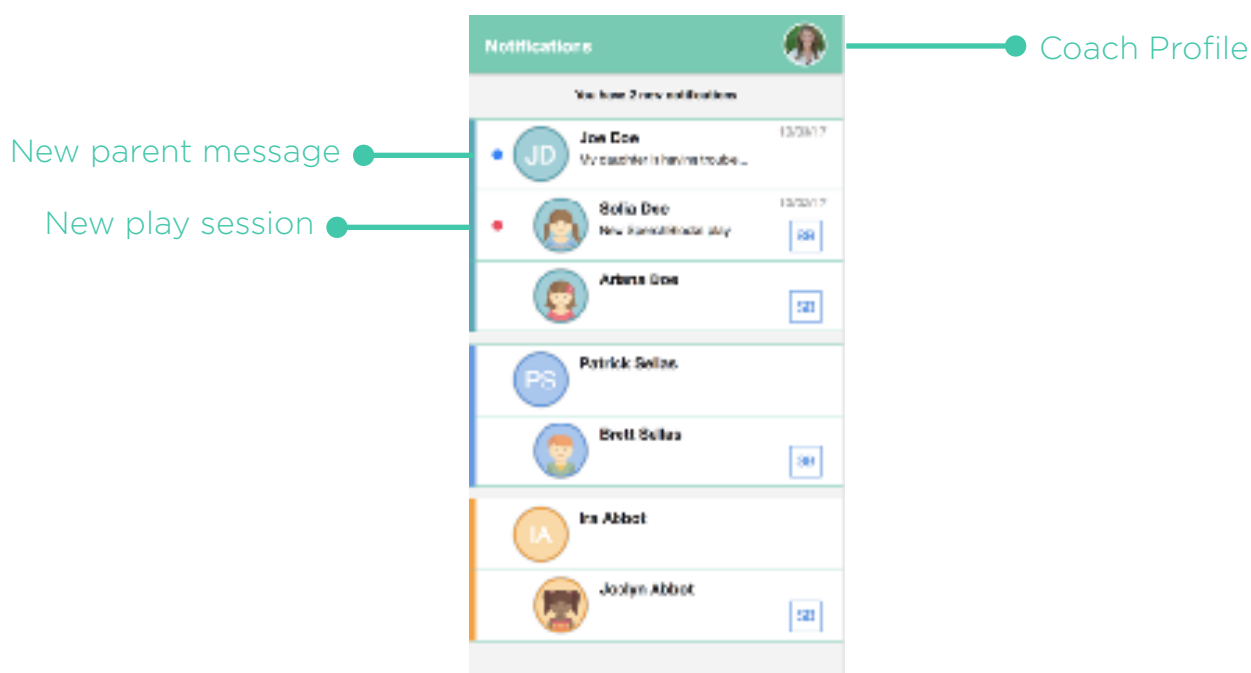
New play session

Analyze Play Screen

1. Once the coach clicks on a child's name (in this case, Sofia), they are brought to the analyze screen (step 1 in the update writing process). It shows the play analytics from the play sessions since the last update was written.

Automated Learning Goals for session

Child's activity information

PlayTree for session

Analyze icon in the navigation bar
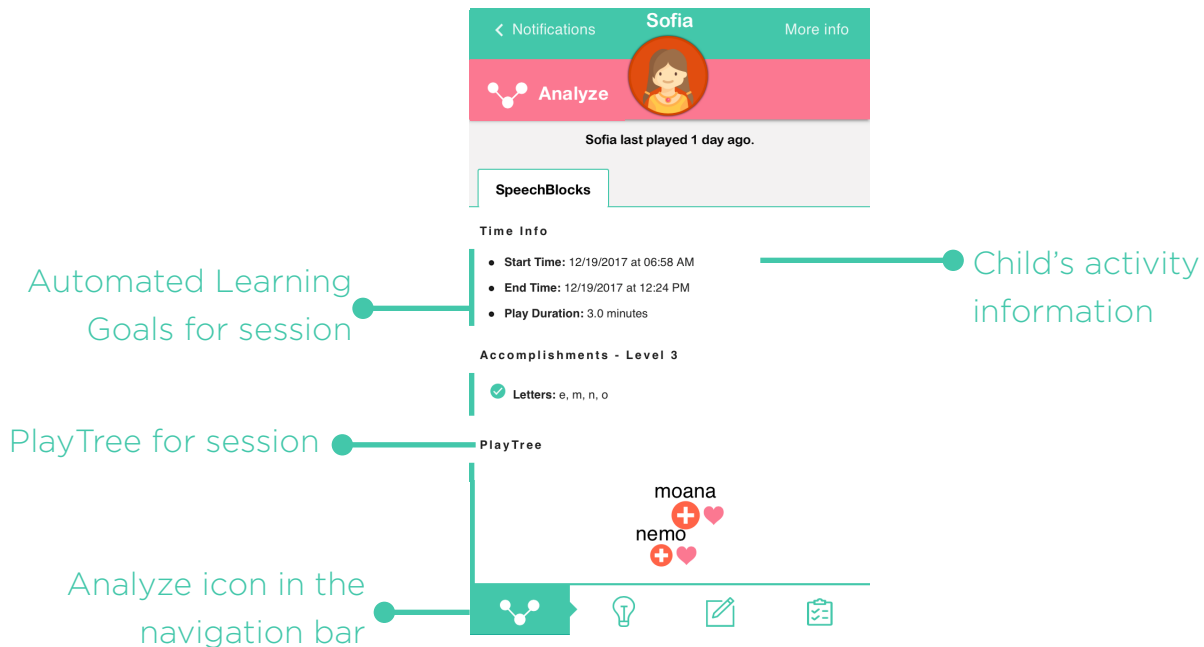
2. Scroll through the PlayTree and click on the nodes (round plus marks) to expand and collapse the PlayTree structures and get a view of how children formed their creations. Bigger nodes represent more complex structures, or more time spent playing with those letters. For more information on PlayTrees, see page 28.

Tap node to expand and collapse PlayTree structure

Expanded PlayTree structure
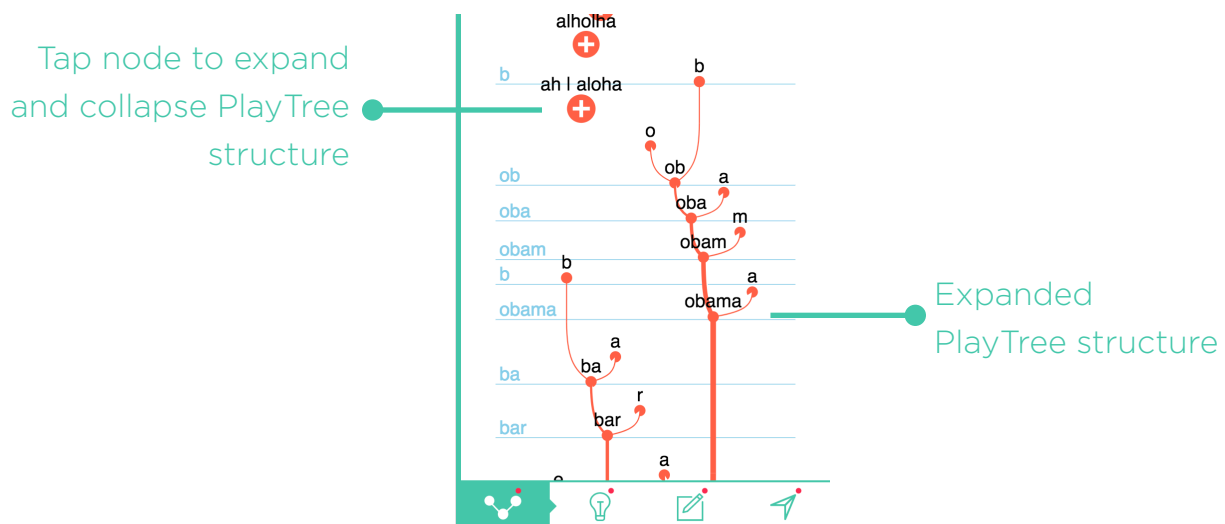
Suggest and Prompt Screen

1. The coach can suggest words for the child that SpeechBlocks will help the child sound out. Coaches also add a prompt for the child based on the suggested words (e.g. for the suggested words "purple" and "pink", the prompt could say "can you think of other colors to write in SpeechBlocks?" This prompt will be read aloud in SpeechBlocks using text-to-speech.

Coach types new suggested words

Textbox to type prompt

Suggest icon in the navigation bar

2. When the child has completed a suggested word, the star turns yellow.
3. To remove previously suggested words that the child has already completed, or may not be interested in, delete them by clicking the trash can next to the word. A list of archived words is below the prompt textbox.
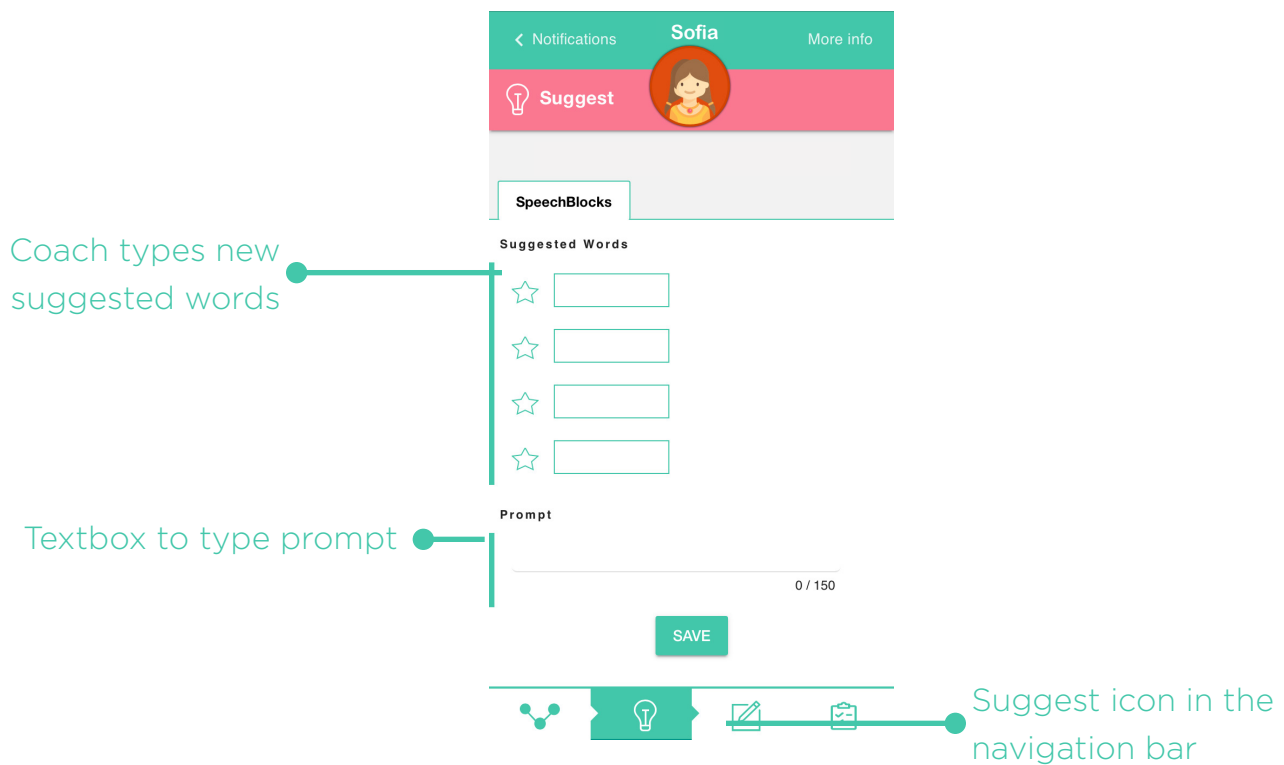4. To add new words, click on the textbox and type in the new suggested word. You can suggest up to 5 words at a time. Each word can be up to 6 characters long.
5. To write a related prompt, click on the textbox below the suggested word and write your prompt. The words and prompts will be sent to the child's device when the update is sent.
6. Coaches only need to suggest words once a week, so if a coach is writing an update but does not want to suggest a word, they can skip this step.
7. Coaches may use information from the PlayTrees, automated learning goals, or activity to inform their suggested words. Use the navigation bar at the bottom to switch between screens. The update process does not have to be linear.

Compose Update and Activity Screen

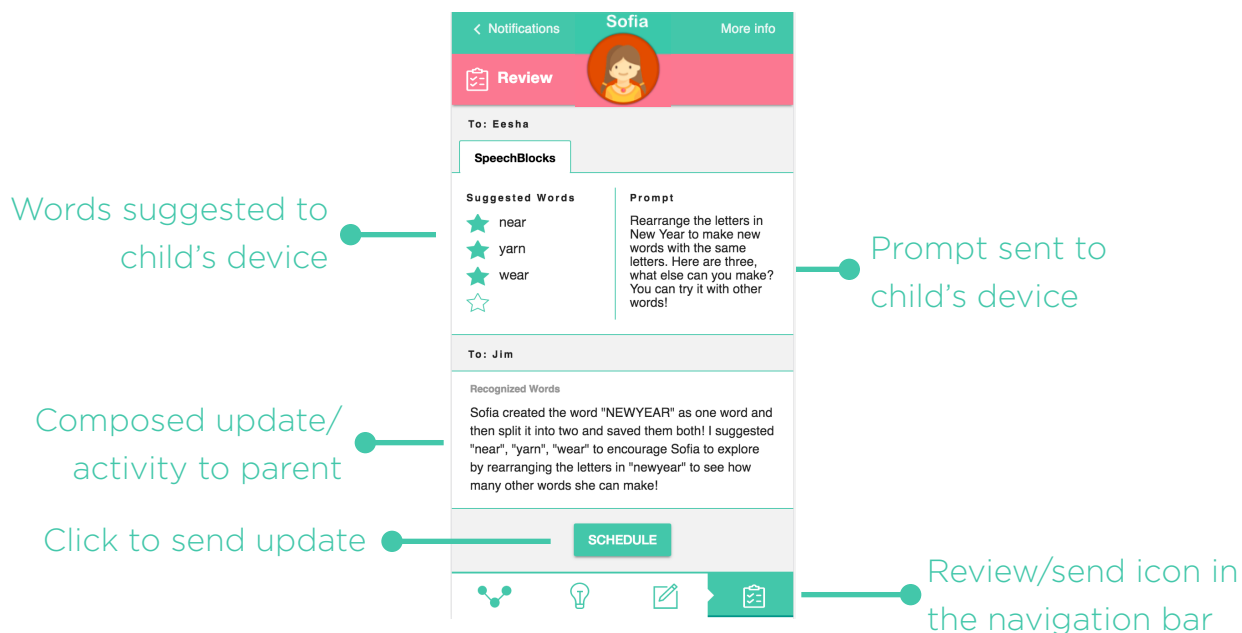1. The coach uses the compose screen to write a short text message-style for the parent up to 3 times a week, and a relevant activity once a week (the activity status at the top will inform coaches when the last activity was sent).
2. To compose an update about the child's play, the coach first categorizes the play by selecting a theme from the dropdown menu.

Click to view automated learning goals

Child's activity and coach update status

Select word category from dropdown menu

Switch sentence prompt

Textbox to type update

Checkboxes for activities and goals

Scroll down for past updates sent

Compose icon in the navigation bar

< Notifications **Sofia** More info

✎ **Compose**

Sofia last played 1 day ago.
You sent an activity to Sofia 7 days ago.

Select a theme...

Select a theme... ▾

Compose update ↻

0 / 250

Update information

☐ This update contains an activity
☐ This update contains a goal

SAVE

3. Next, the coach types a 1-2 sentence update in the textbox. To help coaches structure and vary their updates, sentence prompts are pre-populated within the textbox. Coaches can use them to customize their updates, switch through 5 sentence prompts per theme, or ignore them and structure their own updates.
4. If the update contains an activity, coaches will write the activity in the update textbox following the update. Coaches then must click the checkbox to report that the update being composed contains a suggested activity.
5. If the suggested activity or the words suggested are in pursuit of an automated learning goal (which can be found by clicking "more info"), then the coach must click the checkbox to report and track updates that contain a learning goal.
6. To view previous updates sent to the parent, scroll down. Viewing past updates can be especially helpful for finding trends and making sure to vary updates.
7. Coaches may use information from the PlayTrees, automated learning goals, or suggested words to inform their updates and activities. Use the navigation bar at the bottom to switch between screens.

Review and Send Screen

1. The coach reviews the suggestions that they will send to the child and the text message update they will send to the parent. Once they press submit, their message will be scheduled to be sent at 7pm on the upcoming Monday / Wednesday /or Friday.

Words suggested to child's device

Prompt sent to child's device

Composed update/ activity to parent

Click to send update

Review/send icon in the navigation bar
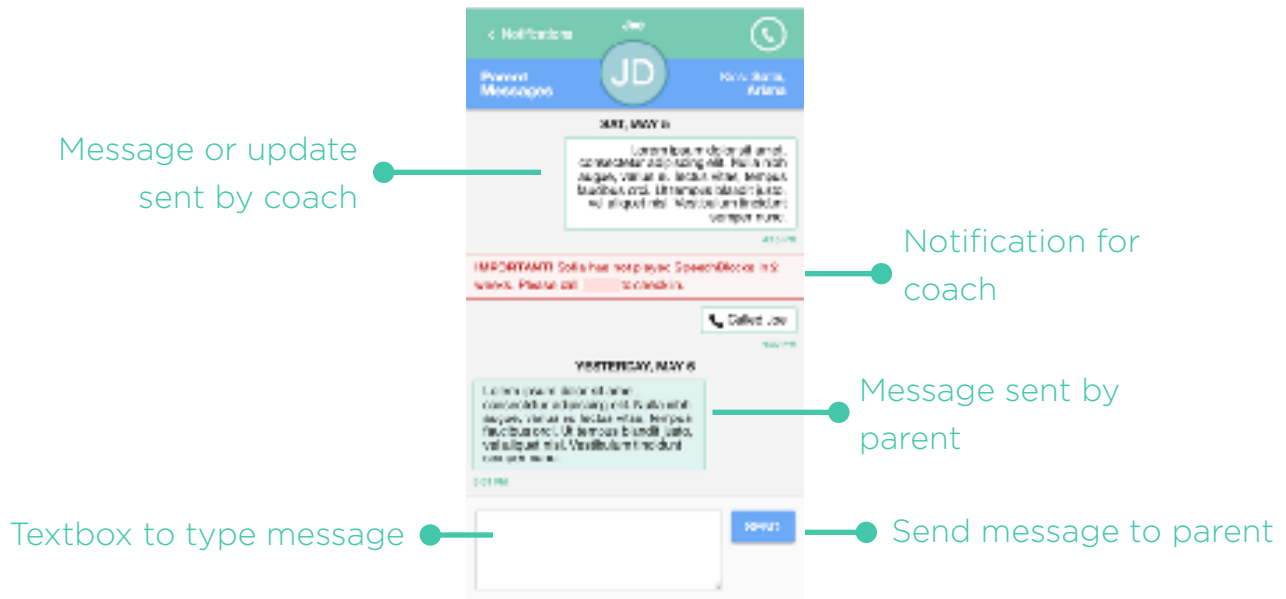
More Info Screen

1. At any point in the 4-step process, the coach can press on the "more info" button on the top right of the screen. It contains background data on the child, the child's overall activity and progress on the automated learning goals.

Child's background information

Child's play activity over entire study

Progress chart on automatic learning goals over entire study

Parent Messaging Screen

1. When the coach selects a parent (e.g. Joe), they go to the parent messaging system. In this system, they can read and send text messages to parents, call a parent, and see system notifications (e.g. "Please call Joe to check in").

Message or update sent by coach

Notification for coach

Message sent by parent

Textbox to type message

Send message to parent

Coach Info Screen

1. From the home screen, the coach can click on their photo to get to the "coach info" screen. Here they can have access to the coaching handbook and chat channel. They can also logout and reset their password on this screen.

Link to coach Facebook group

Link to digital coach handbook
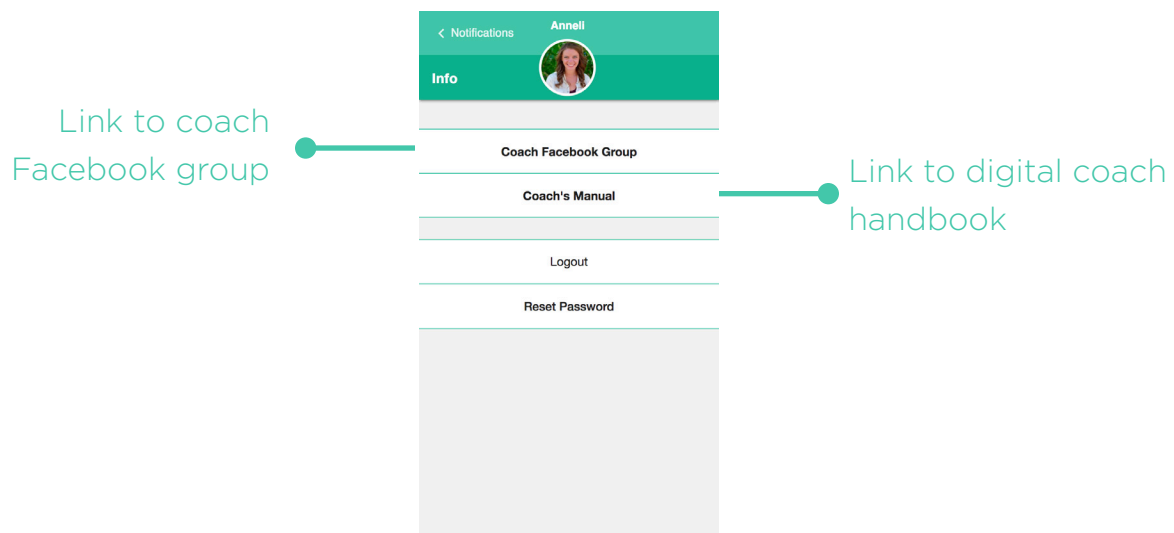
SpeechBlocks Levels

Summary

Levels are determined by a combination of factors including the child's age, grade, pre-literacy scores, and sibling order. The SpeechBlocks levels are used to help personalize the word drawer, set automatic learning goals to help coaches understand children's progress, and help inform coaches in what types of word play to focus on. These levels are for internal use only and SHOULD NOT be communicated to the parents or children.

What are SpeechBlocks Levels?

SpeechBlocks levels are a set of levels ranging from 1-4, which help the coaches and researchers to personalize the SpeechBlocks experience for each child based on their developmental stage. These levels are NOT meant to be communicated to the child or parent, and are only meant to be used internally to set up SpeechBlocks and inform coaches about the child's skill.

How are the levels set?

Levels are set by a combination of children's literacy scores on subtests of the CTOPP-2 (phonological awareness and processing) and the TOC (spelling), as well as children's grade, age, and sibling order. Priority for Leveling goes from CTOPP score (highest), TOC score, grade equivalent, and then age (lowest).

How do coaches interact with the levels?

- The levels can help coaches gain an understanding of child's literacy skills
- The pre-selected words in the SpeechBlocks word drawers are customized for each level, so the app is slightly personalized for the child's literacy ability
- The levels can be used to inform words and activities that coaches might suggest
- The automatic learning goals for coaches are set by the child's level, so that the coach console can search for and highlight age-appropriate skills demonstrated through each child's play.

Level 1

- CTOPP-2 Scores: Range from Below Average to Average
  - Can identify all letters
  - May have hard time with phoneme-grapheme correspondence (lower phonemic awareness)
  - Average to below average phonemic processing
- TOC Scores: Range from Below Average to Average
  - May spell some sight words, but hard time decoding
- K (delayed 1st)
- Ages 5
- Youngest of the participating siblings

Level 2

- CTOPP-2 Scores: Average
  - Can identify all letters
  - Average phonemic awareness skills
  - Average phonemic processing
- TOC Scores: Average
  - Can spell most CVC words and some sight words, may struggle with complex words.
- K or 1st grade
- Ages 5 - 6
- If siblings are both at level 1, then older sibling moves to level 2.
- If siblings are both at level 3, then younger sibling moves to level 2.

Level 3

- CTOPP-2 Scores: Average
  - Can identify all letters
  - Average to slightly above average phonemic awareness skills
  - Average phonemic processing
- TOC Scores: Average
  - Can spell most CVC words and most sight words, and some complex words.
  - Average decoding skills for age range.
- Grades 1st or 2nd (advanced K)
- Ages 6-7
- If siblings are both at level 2, then older sibling moves to level 3.
- If siblings are both at level 4, then younger sibling moves to level 3.

Level 4

- CTOPP-2 Scores: Average to above average
    - Can identify all letters
    - Average to above average phonemic awareness skills
    - Average to above average phonemic processing
- TOC Scores: Average to above average
    - Can spell CVC words, most sight words, and most complex words.
    - Average to above average decoding skills for age range, starting to decode for comprehension.
- Grades 2nd (advanced 1st)
- Ages 7-8
- If siblings are both at level 3, then older sibling moves to level 4.

Analyzing Play with PlayTrees

What are PlayTrees?

PlayTrees are the data visualizations of children's SpeechBlocks play, which recreate every tap and click on the screen to show the process of how words are created and the auditory feedback heard during play (Soltengheis, 2017). PlayTrees help coaches understand children's intentionality and expertise level in forming words. There are many stories that exist within play, and the PlayTrees provide insight into the process of play and give the coaches the key to uncover the stories within play.

What are features of PlayTrees?

During the coaches training, you should be given a phone with SpeechBlocks to play with. After you play, you will be shown the visualized play trace, or PlayTree, from your session. The figure below shows the different features of a PlayTree, which you should be able to notice from your play session and your PlayTree.
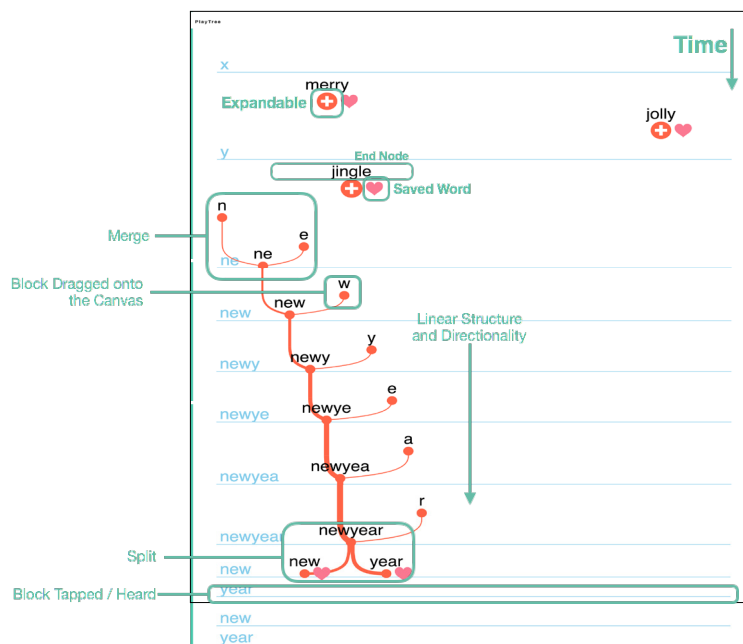
The PlayTree above tells the story of how a child merged letters to make the word NEWYEAR and then split the word into two words NEW and YEAR, saving them both. PlayTrees have features that explain seven different actions:

Merges

Merges are when two letter blocks or words are brought together to build words or letter strings. Sometimes, when many letters are on the canvas and merges occur very rapidly, it demonstrates unintentional wordplay, and children are just trying to play with random letters. Other times, you can see that children merge things together slowly and very intentionally, to build specific words.

Splits

Splits are when two or more letter blocks are separated, to segment words. Sometimes when merges and splits happen quickly, it is an indicator that the letter blocks on the canvas were accidentally put together, and it was not due to the intentionality of the creation.

Collapsing/Expanding Structures

These PlayTrees are expandable and collapsable into their "end nodes". Although the end node is the point at which the child deleted the word, the end node is not usually the "final product". The word or structure that the child intended to create may be within the structure. Since SpeechBlocks encourages exploration, many children continue to play with the word in new ways, even after they spell it correctly or to their satisfaction. To expand any node into its entire PlayTree structure to get the process-based view of play, click on the end node. To collapse it, you can click on the end node again. Nodes with larger circles represent more play structures that took more time for the child to construct.

Linearity of Tree Structure

A lot can be told by looking at the linearity of the tree structure. For example, for older children, adults, and children who are recreating words from a book, the structure of the tree is a clean, left-to-right construction, where the word is spelled correctly letter-by-letter. This is a very linear structure. However, younger children who are exploring with different letter-sounds, or who may be spelling a new word, tend to have non-linear structures, where they have many merges, splits, bursts of activity, and it may not be clear what word(s) they are intending to create. Although it may seem like having a clean, linear structure shows mastery over a word, it is important to remember that we encourage children to play and explore in SpeechBlocks, and a lot of unique stories, advanced wordplay, and important learning moments can be found in non-linear play structures. Additionally, linear play structures that are more advanced and occur in bursts may indicate that another person (i.e. adult) is playing with or helping the child.

How Do Coaches Use PlayTrees?

Just as there is no right or wrong in SpeechBlocks, there is no right or wrong way of interpreting a PlayTree, nor is there only one correct story that a coach unearths within a PlayTree. There are many different of stories in each PlayTree. Unlike a lot of the work in formal learning environments, the goal of the play is not determined by the coach, teacher, adult, or technology. Instead, the goal of the play is created by the child. Coaches must act as detectives to try and uncover the child's intentionality by looking at the PlayTrees and trying to uncover all the stories that exist within the play. Coaches may not always be right, and they may not uncover the true intention, but real learning can come from even seemingly random play that doesn't look like it amounts to a real outcome. Coaches are not merely looking at outcome, instead, coaches should be *focused on the process*.

Categorizing Wordplay

After analyzing the child's play in the PlayTrees, you will be able to pull out meaningful moments or patterns in the play session, categorize the type of wordplay, and then create a short update about the play session to the parent. After analyzing a lot of children's play, we have set 11 categories of wordplay. Since children can make anything they would like in SpeechBlocks, these categories are an attempt to structure children's open-ended play. The categories and examples will not be able to encompass all of the unique types of wordplay that children engage in, but that is okay. These categories are more of a guide for the coaches and researchers to be able to highlight patterns in the play, see trends, and create more informed updates.

Below you will see the 11 categories we have created, definitions of the categories, explanations for why this type of wordplay is important to literacy development, examples of this type of wordplay in children's data, and five sentence prompts to help you formulate updates about each category (which you can also find in the Coach Console when you compose an update, select a category, and switch sentence prompts).

Word Categories

Invented Spelling	Names	Common Sounds	Recognized Words
Sentence Formation	Rearranged Words	Themed Words	Advanced Wordplay
Backwards Spelling	Lack of Activity	Other	

Invented Spelling

What is invented spelling?

Invented spelling is when a word is constructed that is not the recognized English spelling of a word, but that contains letters that represent the sounds of a word. For example, a complicated word like "special" may be spelled "spshal". Oftentimes, the names of letters may replace the sound that this letter makes, for example, "happy" may be spelled "hape".

Why is invented spelling important?

Invented spelling is an important part of learning how to communicate using written words. When kids use invented spelling (e.g. creating the word \"prpul\" to communicate \"purple\"), they are demonstrating that they understand that letters stand for sounds. They are paying attention to the sounds in words and trying to map them to letters.

What are some examples of invented spelling?

TOASTR
- "Sofia created the invented spelling 'TOASTR', which we think is her trying to spell the word 'toaster'. This is an awesome example of Sofia using words in her environment to explore letter to sound mappings!"

AXRAY
- "We think that Sofia might have been trying to spell 'xray' when she wrote the word 'AXRAY'. We will pay close attention to see if this happens!"

GREENBOGRS
- "Sofia created 'GREENBOGRS'. We think she may be sounding out and trying to spell the words 'green boogers'. This is a fun and silly word that shows how Sofia is exploring letter and sound mappings."

What are some sentence prompts?

- KID_NAME wrote the word "SB_WORD". We think they are trying to spell "REAL_WORD". We will keep an eye out to see if that happens!

- We noticed that KID_NAME made the word "SB_WORD". This has the same sound as the word "REAL_WORD". We will see if they keep trying to spell "REAL_WORD".
- KID_NAME created "SB_WORD". We think they may be sounding out and trying to spell the word "REAL_WORD".
- KID_NAME made "SB_WORD", which is the common invented spelling of "REAL_WORD". We will keep checking to see if they make this word! We think that KID_NAME might have been trying to spell "REAL_WORD" when they wrote the word "SB_WORD". We will pay close attention to see if this happens!

Names

What are names?

When a word is constructed that is the name of themselves, the name of a person, the name of a character, the name of a toy or brand, or the name of anything, it can be considered a "name".

Why are names important?

One advantage of SpeechBlocks is that children have the freedom to make personally meaningful words. It is very common for children to make their names, the names of others in their environment, or the names of favorite cartoon characters when playing with SpeechBlocks. Learning how to write their own name is important because it is personally motivating and allows the child to feel a sense of authorship over their creations. Further engaging kids in opportunities that highlight their interests with these characters helps deepen their learning experience. For example, they can use these characters to help tell a story in their own words.

What are some examples of names?

MOANA (character name)
- "We noticed that Sofia's creation 'MOANA' is the name of a children's cartoon character. Is this a character that Sofia likes?"

SOPKINS, SHOPKINS (toy name)
- "Sofia wrote the word 'SOPKINS' and then rewrote the word and added an 'h' to create 'SHOPKINS', the name of the popular children's toy!"

CAMILA, THERESA (child, family, or friend name)
- "SpeechBlocks allows children to make any words they want, and Camila used it to write her name 'CAMILA'! She also wrote the name 'THERESA'."

MOHAMED, ABDULLAHI (public figure's name)
- "We noticed that Sofia has made the words 'MOHAMED' and 'ABDULLAHI', which is the name of the president of Somalia. This name appears to be one of Sofia's favorites.

What are some sentence prompts?
- KID_NAME created the name "SB_WORD"!
- KID_NAME made the name "SB_WORD". Is this the name of <someone/a character> that KID_NAME knows?
- By creating the word "SB_WORD", we think KID_NAME may have been spelling a <name/character's name>! Do you know this <name/character>?
- SpeechBlocks allows children to make any words they want, and KID_NAME used it to write the name "SB_WORD" today!
- We noticed that KID_NAME's creation "SB_WORD" is the name of a <person/ children's cartoon character>. Is this a <person/character> that KID_NAME likes?

Common Sounds

What are common sounds?

This category is very broad, and can represent many different types of word play. First, common sounds can be represented by putting many of the same sounds together, such as "OOO". It can also be represented by using different letter patterns that have the same sound (such as "y", "ee", "ie"). Common sounds also represent when children use alliteration, or repeatedly use a lettern pattern, such as making words with "pi" in them. Lastly, common sounds can also be rhyming words and patterns, for example, when kids make "cat", "bat", "hat" because they have the common sound "at". *Common sounds does not include adding things like a silent -e*

Why are common sounds important?

When kids explore many ways to use a certain sound, they get to hear it in many different contexts and see how it changes when next to other letters. The repetitive use of these sounds exposes kids to the common letter patterns that form these sounds. These include rhymes, alliteration, double vowel patterns, replacing "ee", "y", and "ie" sounds, or using common sound patterns, such as "pi" for many different words

What are some examples of common sounds?

Sound-Pattern Substitution:
POBBE, POPPEE, POPPIE, POPPY
- "Sofia created many versions of the word "poppy" such as 'POBBE', 'POPPEE', 'POPPIE', 'POPEE' and 'POPPY'. Using different vowel patterns to make the long 'e' sound is very advanced word play!"

DORY, KITTY, NAMI
- "By making the words: 'DORY', 'KITTY', and 'NAMI', we think that Sofia might be exploring with putting the letters 'i' and 'y' (which both make the "eee" sound) at the end of different words. Nice work Sofia!"

Rhyming Words/Rhyme Patterns:
BAT, CAT, FAT, MAT, SAT
- "Sofia made the words: 'BAT', 'CAT', 'FAT', 'MAT', and 'SAT' which all have the same sound 'AT' and made a rhyme with them!"

Alliteration / Similar Starter Letters:
PIE, PICK, PICKLE
- "We noticed that Sofia explored with the sounds 'p' and 'pick' when he created the words: 'PIE', 'PICK' and 'PICKLE'. For a fun activity, you can try taking turns to create as many words you can think of that rhyme with 'pick'. You can ask Sofia to use SpeechBlocks to write his favorite rhyming words!"

What are some sentence prompts?

- KID_NAME played with the sound "COMMON_SOUND", creating the words: "SB_WORD".

- We noticed that KID_NAME explored with the sounds "COMMON_SOUND" when they created the words: "SB_WORD".
- When KID_NAME created the words: "SB_WORD", they were playing with the sound "COMMON_SOUND". We will keep an eye out for more exploration with this sound!
- By making the words: "SB_WORD", we think that KID_NAME might be exploring with the sound "COMMON_SOUND".
- KID_NAME made the words: "SB_WORD", which all have the same sound "COMMON_SOUND". We think that KID_NAME was exploring with this common sound.

Recognized Words

What are recognized words?

Recognized Words are a big category that encompass a couple of sub-categories. A recognized word is when children create a recognized English word, often letter-by-letter or through combining parts of system words. Some sub-categories might be "New Word", "Favorite Word", "Plural Word", "Compound Word", "Complex Word", or "Action Word". New words are words that have never been made in SpeechBlocks by the child before. Favorite words are when they save a word or make it multiple times. Plural words are when children add a "S" to the end of a word to show multiple of it, compound word is two words put together, complex words can be their irregular sight words from their goals or words that are difficult to spell (i.e. night), and an action word is a verb, and may be conjugated (ing, ed) or not.

Why are recognized words important?

SpeechBlocks is an open-ended app, meaning that kids can make any word they want. A recognized word is when a child creates a word that is a recognized English word, and, through their play, they indicate that it is a favorite word, a newly made word, a compound word, a plural word, or an action (verb) word. When kids repeat a word many times, it indicates that they are interested in this favorite word. Engaging kids in opportunities that highlight their interests helps deepen their learning experience. Adding a \s\ sound to the end of a word to make a word plural is an important part of learning to write in English. When kids explore many ways to use a certain word, they get to hear it in many different contexts. Repeated exposure to a word helps increase their ability to quickly recognize and use this word when reading

and writing. They also get to explore properties of compound words and how some words may change their sound or meaning when combined with other letters or words.

What are some examples of recognized words?

New Words:
NOTEBOOK
• "We noticed that Sofia made a new, compound word 'NOTEBOOK' today!"

Favorite Word:
RAMADHAN
• "We noticed that Sofia created and saved the word 'RAMADHAN'. This word appears to be a favorite of Sofia's!"

Plural Words:
BUNNIES
• "Sofia created and saved the word 'BUNNIES', spelling it letter-by-letter from left to right! This is a difficult plural word to write, as the word's ending changes from 'bunny' with a 'y' to "bunnies" with an 'ies'."
COMMUNITY, COMMUNITIES
• "Sofia explored with complex plural words when she turned 'COMMUNITY' into 'COMMUNITIES'!"

Compound Words:
RAINBOW
• "Sofia wrote the word 'RAINBOW' letter by letter in SpeechBlocks yesterday, which is a compound word!"

Complex Words:
MEASURE, TEMPERATURE, CLOCK
• "Sofia created some very complex words, like 'TEMPERATURE', 'WEATHER', 'BELOW, 'MEASURE' and 'CLOCK'. It was interesting that before Sofia added the second 'c' to the word "clock", she played around with the letter 'x', possibly to see if it made a similar sound!"

Action Words:

WENT

- "Sofia created the word 'WENT', tapping the 't' many times to hear how it sounded before adding it to the word. This is a great action word that has an irregular past tense. Nice work Sofia!"

What are some sentence prompts?

- KID_NAME created the word "SB_WORD", which is a <new/favorite/plural/ compound/complex/action> word!
- We noticed that KID_NAME made the <new/favorite/plural/compound/complex/ action> word in SpeechBlocks.
- By making "SB_WORD", KID_NAME created a <new/favorite/plural/compound/ action> word by...
- KID_NAME wrote "SB_WORD", which is a <new/favorite/plural/compound/ complex/action> word...
- KID_NAME made the word "SB_WORD" in SpeechBlocks today. <We think/This is> a <new/favorite/plural/compound/complex/action> word because...

Sentence Formation

What is sentence formation?

Children tend to make sentences or phrases in SpeechBlocks by either putting the words of a sentence into one word, making the words separately and tapping on them in a sequence to hear the sentence, or mixing some of the words together and other parts of the words in the sentence separately. Here, it is important to look at the auditory feedback (or the blue lines on the PlayTrees) that the child hears, as this can usually give a good idea of whether children are constructing sentences or not.

Why is sentence formation important?

By using nouns and verbs to create a sentence, kids show that they have an advanced understanding of how words can be put together to create sentences and tell stories. In SpeechBlocks, sometimes children make sentences by putting the nouns and verbs together as one word.

What are some examples of sentence formation?

THEDOG, CHASEDTHE, CAT
- "Sofia created the words: 'THEDOG', 'CHASEDTHE', and 'CAT' to form a sentence ('the dog chased the cat') and start telling a story!"

ALL OF US ARE SEESAW
- "By making the words 'ALL', 'OF', 'US', 'ARE', and 'SEESAW', we think that Sofia is using SpeechBlocks to form a sentence ('All of us are seesaw')!"

I LOVE YOU
- "Sofia wrote one of her first sentences in SpeechBlocks: 'I LOVU YOU'! Awesome work, Sofia!"

What are some sentence prompts?

- KID_NAME created a sentence: "SB_WORD".
- We noticed that KID_NAME used the words: "SB_WORD" to make a sentence!
- KID_NAME created the words: "SB_WORD" to form a sentence and start telling a story!
- By making the words "SB_WORD", we think that KID_NAME is using SpeechBlocks to form sentences!
- KID_NAME used the words "SB_WORD" to form a sentence to convey a message. This is a great next step to storytelling!

Rearranged Words

What are rearranged words?

Rearranged words are when children take one word, or a part of one word, and either rearrange the letters to form another word (such as NEMO into LEMON) or they take a word like PUMP and add KIN onto it to create another word, like PUMPKIN. These can be multi-syllabic words, or compound words, but are usually constructed from words that they have already made or system words. Lastly, rearranged words can be something like adding a silent-e to the end of a word to make the middle vowel change its sound. Such as making "CAP" into "CAPE". This is different from common sounds, because it is usually made by remixing words, not just making one word and then another separately!

Why are rearranged words important?

When kids rearrange the letters of one word to create other words, they are showing flexibility, increased vocabulary, and awareness of how letters correspond to sounds. This is a very advanced skill! This is not for rhyming patterns or common sounds, but is when they turn one word into another, or add something onto the word, to create a new word (i.e. ART + W = WART).

What are some examples of rearranged words?

LAST --> LASER
- "Sofia made the word 'LASER' by remixing the word 'LAST', removing the 't', and adding the 'er'! This is some advanced word play."

BALL --> ABALLEINI
- "Sofia rearranged the letters in 'BALL' to created the word 'ABALLEINI'. This is a great way to play around with letters and words and make them fun!"

NO --> ON --> NO
- "Sofia rearranged the letters 'n' and 'o' to create the words 'NO' and 'ON' multiple times! Rearranging these letters is a great way to explore how they can be put into different orders to make new words with different meanings!"

ART --> WART
- "Sofia created the word 'ART', and then later used it to make the word 'WART'! This is a great way to play around with sound patterns to create new words!"

BUCKET --> BUCK
- "By using the letter blocks from the word 'BUCKET', Sofia created the word 'BUCK', which has many of the same letters!"

What are some sentence prompts?

- KID_NAME rearranged the letters in "COMPONENT_WORD" to create the word "SB_WORD".
- We noticed that KID_NAME rearranged the word "COMPONENT_WORD" to make new words like "SB_WORD".
- KID_NAME used the word "COMPONENT_WORD" to explore and create other words, such as "SB_WORD".
- By using the letter blocks from the word "COMPONENT_WORD", KID_NAME created the word "SB_WORD", which has many of the same letters!
- KID_NAME made the word "SB_WORD" by remixing the word "COMPONENT_WORD"!

Themed Words

What are themed words?

Children will often make a couple of different words that relate to a similar theme in one play session. These words can be scaffolded by things in their environment, suggested as an activity, or something that they have done completely on their own. Common themes may be making colors, animals, foods, locations, words starting with (any letters), etc.

Why are themed words important?

Making words that follow a theme or category is a great way to expand vocabulary, take inspiration from your surroundings, and engage in creative wordplay. Encouraging children to make as many words that they can think of in x category is a great way to get them inspired to create in SpeechBlocks and try to make new words.

What are some examples of rearranged words?

FLORIDA, CANADA, SPAIN, PERU (locations)
- "Sofia wrote the names of many locations, such as 'FLORIDA', 'CANADA', 'SPAIN', 'PERU', 'ASIA', and 'ANTARCTICA'! For a fun activity, Sofia could try writing short sentences that contain these countries, such as 'Florida has sun' and 'Antarctica is cold'."

DUCK, PENGUIN, PIG (animals)
- "Sofia created and saved many words in SpeechBlocks! She made the names of animals, such as 'DUCK', 'PENGUIN', and 'PIG'. For a fun activity, you could suggest categories for Sofia, such as 'things found outside' and ask her to make as many words she can think of that fall under that category."

MONDAY, TUESDAY, THURSDAY, FRIDAY (days)
- "Sofia made many different words, like the days of the week when she wrote 'WEDNESDAY', 'FRIDAY', 'TUESDAY', and 'MONDAY'! Nice work, Sofia!"

What are some sentence prompts?

- KID_NAME created the words "SB_WORDS", which all have the theme <insert theme here>. Which word in this theme is KID_NAME's favorite?

- We noticed that KID_NAME made the words "SB_WORDS". All of these words fall under the category <insert theme>. Nice work, KID_NAME!
- By making the words "SB_WORDS", KID_NAME wrote about the theme <insert theme>!
- KID_NAME made created words for the theme <insert theme> when they made the words "SB_WORDS". Does KID_NAME like <theme+s>?
- KID_NAME wrote the words of many <insert theme>, such as "SB_WORDS".

Advanced Wordplay

What is advanced wordplay?

Advanced word play is when children play with SpeechBlocks in a new, unique, and advanced way. Often, older children who have a mastery of spelling may make things like song lyrics, make the name Barack into "be" and "rock", or even write messages directly to the coaches! These have their own category because they demonstrate advanced play and are important to note (especially for later activity ideas!).

Why is advanced wordplay important?

When children play freely, they tend to demonstrate a mastery of letters, spelling, and words in a creative manner, either by sending messages, playing around intentionally with letter patterns, or making song lyrics. When children demonstrate advanced word play in SpeechBlocks, they are showing that they have an understanding of the conventions of writing in English, and are using creative ways to play with words!

What are some examples of advanced wordplay?

KAMAAL --> COME ALL (wordplay)
- "Kamaal used SpeechBlocks to write his name, 'KAMAAL', and then rearranged the letters to construct different words, such as 'CAME' and 'ALL' that when put together into the component word, 'COMEALL' sound exactly like his name, Kamaal. This is a very advanced skill!"

HELLO WORKERS AT SPEECHBLOCKS (communicating)
- "Sofia also said hello to us when she wrote the sentence 'HELLO' 'WORKERS' 'AT' 'SPEECHBLOCKS'! Please tell Sofia we say hello!"

WHIP, NAENAE (song lyrics)
- "By making the words 'WHIP' and 'NAENAE', we think that Sofia is using SpeechBlocks to write the lyrics to a song!"

What are some sentence prompts?

- KID_NAME used advanced word play by...
- We noticed that KID_NAME made the word(s) "SB_WORDS". This showed advanced word play by...
- By making the words "SB_WORDS", KID_NAME used advanced word play by... Nice work KID_NAME!
- KID_NAME made the word(s) "SB_WORDS" in SpeechBlocks by... This is some advanced word play because it shows that KID_NAME understands...
- KID_NAME created "SB_WORDS" by.... This is some advanced word play and a unique way to use SpeechBlocks!

Backwards Spelling

What is backwards spelling?

For the older children, spelling things backwards, or even constructing the word from right to left even though the end word is in the correct direction is an intentional way of making text reversals and demonstrates advanced word play. However, for younger children, sometimes they are still understanding the directionality of how we read text, and they may make mistakes in the orientation of where they put the letters. Since SpeechBlocks has immediate auditory feedback, many children who are engaging in backwards spelling will correct their mistakes. It can be difficult to know whether the backwards spelling was intentional or not. Usually if the child makes the word backwards and forwards, it is intentional and they are playing!

Why is backwards spelling important?

In English, we read and write from left to right. Understanding the directionality of text is a literacy skill that kids develop while exploring letters and words. When

kids spell words backwards (for example, writing jump as "pmuj"), they are demonstrating that they know all of the letters and sounds that are in the word, but are still learning what order to put them in.

What are some examples of backwards spelling?

ZYXWVUTSRQ
- "Sofia started making the alphabet backwards in SpeechBlocks! Starting from Z and then moving all the way to Q, making the string of letters: 'QRSTUVWXYZ', but constructing it from right to left!"

ACNAIB
- "We noticed that Sofia made the word 'ACNAIB'. This is the backwards spelling of her friend's name, 'BIANCA', which she later spelled.

MOMMY
- "Sofia wrote the word 'MOMMY' in SpeechBlocks by making it backwards! For a fun activity, you can talk with Sofia about words that are spelled the same forwards and backwards, such as 'racecar'. She can make her favorite words in SpeechBlocks!"

What are some sentence prompts?

- KID_NAME wrote the exploratory word "SB_WORD", which is the English word "REAL_WORD" in reverse.
- We noticed that KID_NAME made the word "SB_WORD". This is the backwards spelling of "REAL_WORD".
- KID_NAME created "SB_WORD". We think they may be trying to spell the word "REAL_WORD", which has all the same letters as KID_NAME's creation.
- KID_NAME made "SB_WORD". We think they may be exploring with the order of the letters in the word "REAL_WORD". We will keep an eye out to see if they make this word!
- We think that KID_NAME might be trying to spell "REAL_WORD" when they wrote "SB_WORD". We will pay close attention to see if this happens!

Lack of Activity (LOA)

What is a lack of activity update?

Lack of Activity is when children don't play with SpeechBlocks for seven consecutive days in a row. We then send an update to let the parent know that SB has not been played in awhile, and suggest an activity to help inspire more play. After 2 LOA updates (14 days of no play), the parent should be called to check-in.

Why is a lack of activity update important?

This is important because there are many reasons why children may not be playing with SpeechBlocks, and we do not want to continue to send updates if they are not playing. Sometimes people need inspiration to help them play in this open-ended app, which is why we send activities with the LOA update. Additionally, calling families after 2 weeks is a nice way to check-in and make sure everything is okay, or if we need to fix anything.

What are some examples of lack of activity updates?

- "We noticed that Sofia has not played with SpeechBlocks in a while. For a fun activity, you could play a rhyming game with Sofia and try to encourage her to make words that end with the same sound, but are spelled differently, for example, 'grow' rhymes with 'toe'."
- "We noticed that Sofia has not played with SpeechBlocks recently. We also noticed that one of Sofia's favorite words in SpeechBlocks is 'rainbow'. For a fun activity, you could help Sofia write all the names of the colors in the rainbow by sounding out the words as she spells them in SpeechBlocks. You can even encourage her to draw a picture to go along with all her new words!"
- "We noticed that Sofia and Johnny have not played with SpeechBlocks in a while. A fun activity that Sophia and Johnny could do together with SpeechBlocks is to go around the house and write some of their favorite words from their environment in SpeechBlocks."

What are some sentence prompts?

- KID_NAME had less activity than usual. For a fun activity to inspire KID_NAME, you could try...
- We noticed that KID_NAME has not played with SpeechBlocks in awhile. If you need some ideas for activities, you can try...
- KID_NAME has not created any words in SpeechBlocks recently. For activity ideas, try...
- KID_NAME has not played with SpeechBlocks in a while. For fun activities KID_NAME can do with SpeechBlocks, try...
- We haven't seen any activity from KID_NAME for a while, maybe try...

Other

What is the other category?

Children come up with some pretty unique ways to use SpeechBlocks, and the categories listed above do not encompass all of the ways to group the different types of wordplay that children engage in. Therefore, if there is a word or type of play that you want to write about, but it does not fit into any of the categories listed above, you can categorize it as "other". Please be sure to make a note of what the play is and tell the coach coordinator, so we can record new kinds of play. You can also suggest new categories to the coach coordinators!

What are some sentence prompts?

- KID_NAME created...
- We noticed that KID_NAME made...
- By making "SB_WORD", KID_NAME...
- KID_NAME wrote...
- KID_NAME made the word "SB_WORD" in SpeechBlocks today.

Automated Learning Goals

Summary

Automated learning goals are a set of common literacy benchmarks that the PlayTrees highlight to help coaches monitor progress during each session and overtime and may inform coach updates and suggested words. These learning goals are NOT comprehensive, are meant to be viewed as standards, and do NOT need to be accomplished by the child. These are for internal use by coaches only, and should not interfere with the playful nature of SpeechBlocks.

What are automated learning goals?

Automated learning goals are set for each SpeechBlocks level to help coaches identify important literacy milestones and trends that occur during play in order to help coaches see progress overtime, gain insights into where a child may be struggling, and inform coach-created activities or suggested words in order to help children expand their sphere of exploration and achieve their own personal play goals. These goals are based on Common Core standards, but are modified to imagine ways in which these benchmarks would be met through playful exploring in SpeechBlocks. We have automated these goals and translated them into a graph so that coaches can easily see the frequency of these goals in individual play sessions and overtime. As coaches, it can be hard to keep track of all of the learning moments and trends occurring during play, especially for moments that are not captured in the updates. The purpose of these goals are to extend the coach's memory and help coaches pay attention to specific learning trends.

What automatic learning goals are NOT

At first glance, these goals may seem to be in conflict with our open-ended, constructionist approach to literacy. However, there are many ways to achieve these goals through play, and if they are only used to help guide the coach, then they will not conflict with the open-ended nature of SpeechBlocks. Therefore, it is important to specify what these goals are NOT.

- These goals are NOT meant to be prescriptive. The child does NOT have to achieve these goals in order to demonstrate that they are learning. These goals should NOT be used to assess or evaluate the child in any way.

- These goals do NOT encompass all of the ways to learn through play. These goals are only a small subset of skills that relate to literacy development, and children will engage in unique wordplay beyond the scope of these goals. That is why the analysis of the PlayTrees from the coaches is so important, and why we believe that automation alone would not be enough to catch all of the important nuances of how children learn through play.
- Our algorithms are NOT perfect! Since these goals are automated, our algorithms will not be able to identify all of the occurrences accurately. Also, since goals are set by level, some children may engage in play that meets the learning goals outside of their level, and the algorithms may not be able to detect this type of play.
- These goals are NOT meant to be seen by the child or parent. These are internal goals for the coaches only, to help guide coach's feedback. You may let a parent know about the trends found in these goals, but you SHOULD NOT use language that implies that these trends are specified learning goals that their child must achieve.
    - For example: you can say, "we noticed that Kid_Name has made many CVC words. To explore playing with long vowels, we have suggested that he add an -e to the end of his words to hear how the middle sound changes!" You CANNOT say, "Kid_name has achieved many CVC words, but they have not made any long vowels, which is a learning goal for their level.").

How do coaches use the automated learning goals?
- See the frequency of learning goals within an individual play session.
- See each child's frequency of learning goals overtime.
- Use goal notifications and graph of goals to find gaps and create activities or suggest words and prompts that address those gaps (ONLY if it is related to child's interest and/or builds upon past play).
- Look within the graph to see examples of play that met these goals and track the variation of play within each goal (to inform prompts that encourage child's exploration).

Learning Goals for Level 1

Letters

Using every letter in the alphabet, and hearing it aloud.

CVC

Making CVC words (e.g., cat, man, bat, rag, hog, log, run, ran) on their own, letter-by-letter.

Sight

Making common sight words (e.g., the, of, to, you, she, my, is, are, do, does) on their own, letter-by-letter,

Rhyme

When a child takes the rhyme pattern from one word and rearranges it to create a new rhyming word (ex. BALL -B, +C, into CALL). Also, when a child makes many words that rhyme in one play session, such as PIP, HIP, LIP.

Compounds

Making multi-syllabic or compound words (i.e. make BATMAN with BAT and MAN. Make RAINBOW with RAIN and BOW).

Long Vowels

Making the word CUT and adding an E at the end to make the word CUTE, or making EE and OO patterns like FEED or FOOD.

Learning Goals for Level 2

Letters

Using every letter in the alphabet, and hearing it aloud.

Digraph Blends

Making words with common consonant blends or digraphs on their own, letter-by-letter, such as ST in STAR or digraphs such as CH in CHIP. Or taking apart the consonant blend/digraph to make the word into a CVC word (i.e., chop vs. cop).

Sight

Making common sight words or irregular words correctly on their own, letter-by-letter (the, you, said, his, people, to, they, were, do, know, was, would, are, some, your, of, there, because, as, mother, is, one, what, could, who, two, too, should, put, whose).

Rhyme
Either when a child takes the rhyme pattern from one word and rearranges it to create a new rhyming word (ex. DRIVE -DR, +H = HIVE). Also, when a child makes many words that rhyme in one play session, such as GROW, SHOW, BOW.

Compounds
Making multi-syllabic or compound words (i.e. make BATMAN with BAT and MAN. Make RAINBOW with RAIN and BOW).

Long Vowels
Making the word CUT and adding an E at the end to make the word CUTE. Also can have PEP turn into PEEP. Or using IE.

Suffixes
Adding a -s, -es, -ed, or -ing to the end of a word.

Learning Goals for Level 3
Letters
Using every letter in the alphabet, and hearing it aloud.

Di-Trigraph Blends
Making words with common consonant blends or digraphs and trigraphs on their own, letter-by-letter, such as ST in STAR, SPR in SPRING, or digraphs such as CH in CHIP. Or taking apart the consonant blend/digraph/trigraphs to make the word into a CVC word (i.e., chop vs. cop).

Sight
Making common sight words or irregularly spelled words correctly on their own, letter-by-letter (the, you, said, his, people, to, they, were, do, know, was, would, are, some, your, of, there, because, as, mother, is, one, what, could, who, two, too, should, put, whose, again, answer, any, been, both, brought, cold, color, come, does, earth, enough, example, eyes, father, find, four, friend, from, give, great, have, kind, learn, listen, live, many, most, move, off, often, old, on, once, only, other, their, though, through, want, water, where, word, work). (See Level 3 Sight Words).

Rhyme

Either when a child takes the rhyme pattern from one word and rearranges it to create a new rhyming word (ex. DRIVE -DR, +H = HIVE). Also, when a child makes many words that rhyme in one play session, such as GROW, SHOW, GO.

Compounds

Making multi-syllabic or compound words (i.e. make BATMAN with BAT and MAN. Make RAINBOW with RAIN and BOW).

Complex Vowels

Making the word CUT and adding an E at the end to make the word CUTE. Also can have PEP turn into PEEP. Starting to use more complex vowel patterns, such as FEED versus FEAR or HOOD versus HOUND.

Prefix-Suffix

Adding -s, -es, -ed, or -ing to the end of a word, or un- or re- to the beginning of a word.

Soft Letter

Making words where the consonant C or G changes when adding an E, and spelling it correctly (i.e., spell RACE not RACK and can turn FACT into FACE).

Learning Goals for Level 4

Letters

Using every letter in the alphabet, and hearing it aloud.

Complex Pattern

Making words with some of the complex digraphs (GH, PH) or sight chunks (OUGH, TION) on their own, letter-by-letter (such as ENOUGH, THOUGHT, EIGHT, or PHONE, GRAPH).

Sight

Making common sight words or irregularly spelled words correctly on their own, letter-by-letter (the, you, said, his, people, to, they, were, do, know, was, would, are, some, your, of, there, because, as, mother, is, one, what, could, who, two, too, should, put, whose, again, answer, any, been, both, brought, cold, color, come, does, earth, enough, example, eyes, father, find, four, friend, from, give, great, have, kind, learn,

listen, live, many, most, move, off, often, old, on, once, only, other, their, though, through, want, water, where, word, work). (See Level 4 Sight Words).

Advanced Rhyme

Either when a child takes the rhyme pattern from one word and rearranges it to create a new rhyming word (ex. DRIVE -DR, +H = HIVE). Also, when a child makes many words that rhyme in one play session, such as GROW, SHOW, GO, and TOE, or rhyming EIGHT and ATE.

Complex Vowel

Making words that contain double vowel pattern such as OU, OE, UI, UE, AE, AI, AU, EA, EI, IE, IO, in a real, recognized English word (HOUND, BELEIVE, QUESTION).

Prefix-Suffix

When a child makes a word and then later adds on a prefix or suffix, such as WATER into WATERING. Or, if they take a word, like KING and use the ING and put it onto another word. This play is especially advanced if they change certain spellings, such as CRY to CRIED or RUN into RUNNING. (See Affixes by Grade).

Soft-Silent Letter

Making words where the consonant C or G changes when adding an E, and spelling it correctly (i.e., spell RACE not RASE and can turn FACT into FACE). Or using silent letters, such as K or B in KNOCK and THUMB.

Suggesting Words and Prompts for Children

Summary

Suggested words and prompts are sent to children to help them spell out new words that expand on their past play and inspire children to play with SpeechBlocks in new ways. Coaches can get inspiration for the words from children's invented spelling words, the automated learning goals, or other interests that the child has expressed. There are many important things to remember when suggesting words and prompt, such as relating the words to past play and informing the parent of the words you suggested in their update.

What are suggested words?

Suggested words are the words (and related prompts) that coaches send to the child's device, and SpeechBlocks helps the child construct the word by sounding it out. These words are often words that the child tried to spell or new sound patterns that the coach prompts the child to explore based off of the child's past play (e.g. if the child makes CVC words, the coach may suggest words with a silent-e in pursuit of the long vowel learning goal).

The child's suggested words are sent back to the SpeechBlocks app, appearing in the app's suggestion bar, along with a verbal prompt to encourage more exploration. Additionally, the parent update then contains a sentence that lets the parent know which words were suggested to the child, and why.

The suggested words and prompts are the only conduit for coach-child interactions. All other interactions of the coach aim to support the parent in understanding and guiding the child. Therefore, it is important for the coach to use these suggested words and prompts as a means to directly support the child in achieving the child-directed goal, and communicate prompts and words that inspire the child to use SpeechBlocks in creative ways that reinforce what they are learning. In this way, coaches guide the child towards new ways of playing that expand their sphere of exploration.

Why are there prompts?

The verbal prompts are a new addition to the suggested word feature in order to explain to the child why the words were suggested, and encourage further exploration with the new words. When writing in the verbal prompts, it is important to keep it brief, specific, and inspirational. For example, if we take the example above, where the child makes many CVC words, and the coach suggests words that add a silent-e to the end of their word, then the related prompt may be something like, "When you add an E to the end of your three-letter word CAP, it changes the middle sound into CAPE. Try adding an E to other words to hear if the middle sound changes or not!"

Where can coaches get inspiration?

Suggested words and prompts should always be inspired by past play. Just as there are no right or wrong ways to analyze the play, there are no correct words to suggest. However, sometimes it can be difficult to think of words to suggest (especially for children who have not played a lot). Below are some places where you may find inspiration from words (this is not a comprehensive list, so please tell us about the other ways you get inspired to suggest words).

- Child's invented spelling
    - Child makes "diamite" several times, may suggest DYNAMITE
    - Child makes animal characters ("batman", "catman", "pengwenman"), may suggest PENGUIN
- Learning goals that the child has not demonstrated much in past play, but builds upon what they have been exploring
    - Child makes many CVC words (like "cap" and "tap"), but hasn't yet explored with long vowels, may suggest CAPE and TAPE.
- Themes that a child is exploring
    - Names, locations, colors, animals, things found outside, etc.
    - Associations, attributes, etc.
    - Words related to themes the child likes (i.e. sports)
- Words that contain a new pattern or style of wordplay that a child is exploring
    - Compound words (real or silly)
    - Rhyming words (real or silly)
    - Complex rhyming (LOW, GROW, TOE)
    - Words that start with a letter that a child is interested or focused on (alliteration)
    - Words with complex or advanced patterns (i.e. CH, TION)
    - Focusing on plurals, prefixes, suffixes

- Words that are related or associated with an interest that a child has expressed, but that vary in structure.
  - Interest in sports, may suggest: PLAY, PLAYING, RUN, RUNNING
  - Interested in Disney's Frozen movie, may suggest: ELSA, SINGS
- Words that can be formed into a sentence or story that a child is interested in, or if a child keeps making character names or writing sentences in SB.
- Words that relate to life events (e.g. birthdays) that the child is interested in.

How do coaches suggest words and prompts?

Words are suggested within the Coach Console. The screen to suggest words will appear after analyzing the play, and before categorizing it and composing the parent update. However, the console does not have to be used linearly, and you may wish to skip this step and go back to it after composing the update, or you can choose to skip this step and compose an update if you have no words to suggest. Suggested words should be sent to the child once a week, and should not exceed 5 suggested words at a time (that are up to 6 characters in length).

To suggest a word, you must type the word in the textbox next to the star. To delete words that have already been suggested, you can just delete them by clicking the trash icon. You must then type in the verbal prompt you want to accompany the words in the prompt textbox below. Your prompt cannot exceed 150 characters. Remember to always include the words you suggest in the parent update before sending.

Important reminders about suggested words and prompts?

- Always inform the parent in an update about the words you sent and why.
- Try to send suggested words once a week (you may send them more, depending on how much the child plays, but try not to exceed 5 suggested words a week).
- Make sure to delete old suggested words once the child has completed them (before sending a new word) or if they have been on the device for a long time (over 1 week) and have not been played with.
- You cannot have more than 5 suggested words at a time.
- Always make sure the words are in some way related to past play or child interest.
- Always make sure the prompt encourages opportunities for further exploration, instead of making it feel like homework.
- If the suggested words are in pursuit of a learning goal, do not mention that this is a goal to the parent or child in the prompt or update.

What are some examples of words and prompts?

Example with invented spelling:

Child made: DINAMITE

- Suggested Words: DYNAMITE, BOOMING
- Suggested Prompt: "You made what sounded like dynamite, so I sent you that word and other related words. Try making sentences about this word, or other words that relate to dynamite."
- Parent Update: "I noticed that Sofia made the words 'DIAMITE' and 'DINAMITE', which I think are invented spellings of the word "dynamite". To help him, I sent the words 'dynamite' and "booming" to his device and encouraged him to explore with other related words."

Example with themed words:

Child made: SPRING, SUMMER, WINTER, AUTUM

- Suggested Words: AUTUMN, LEAVES
- Suggested Prompt: "You could try coming up with as many words as you can that relate to the category of season fall. To get started, we sent you the words AUTUMN and LEAVES!"
- Parent Update: "Sofia made words that related to places, such as 'DENMARK' and "BOSTON", and words for the seasons, 'SUMMER', 'WINTER', 'SPRING', and 'AUTUM' (invented spelling of 'autumn'). For a fun activity, you could challenge Sofia to make as many words as she can that are in the category of "fall". I sent two words ('autumn' and 'leaves') to help get her started."

Example with compound words and rearranged words:

Child made: FLEW, FLOWER, MAN

- Suggested Words: RAINBOW, SUPERMAN, BATMAN
- Suggested Prompt: "You can put two smaller words together to make bigger words, like rainbow, superman, and batman. Are there other words or new character names you can create by putting other words together?"
- Parent Update: "Sofia created the word 'FLEW' and then used the letters to explore and create other words, such as 'FLOWER'. Since Sofia created some multi-syllabic words ('flower'), and some compound words, I have sent the multi-syllable/compound words 'rainbow', 'superman', and 'batman' to his device. For a fun activity, you could help him make these words, and explore how to make other made-up compound words (e.g. 'superbat') together."

Creating Parent Activities

Summary Header

Activities are sent to the parent to help suggest fun, relevant ways for parents to co-engage with their children in order to reinforce what their child is learning with SpeechBlocks. Inspiration for activities can come from many places, and there are no right or wrong activities. This is a time for coaches to get creative and think of fun ways to bring the SpeechBlocks play to life! Make sure to read about the important reminders for creating activities.

What are SpeechBlock activities?

Once a week, coaches send out an update to the parent that contains a short, relevant activity related to the child's past play that the family and child can do together (on or off the screen) to reinforce what the child is learning in SpeechBlocks and to inspire new ways of playful learning within the app. The purpose of these activities is to help empower the parents to co-engage in their child's playful learning process, and offer ways for parents to continue supporting progress through play. When analyzing PlayTrees, a coach is witnessing the child's creative process. The activities are the coaches way of getting to build upon the child's play and getting to be creative themselves.

Where can coaches get inspiration for activities?

Activities should always be inspired by past play. Just as there is no correct way to analyze play, there is no correct type of activity. However, sometimes it can be difficult to think of activities (especially for children who have not played a lot). Below are some places where you may find inspiration for activities (this is not a comprehensive list, so please tell us about the other ways that have inspired activities).

- Child's Past Play
    - Create activities based on words that children have created invented spellings for, and help the parents scaffold spelling these words in playful, creative ways.
    - Themed words, encouraging making words together from themes or categories children have already written about.

- Activities can be informed by the automated learning goals
  - Rhyming challenges
  - Compound word play (creating new words or characters)
  - Adding a silent -e and deciding whether it changes the middle sound or not
  - Coming up with as many words as possible that follow a specific letter pattern
- Combine the suggested words and prompts for the child with the parent-child activity
- Physical games
  - Charades with SpeechBlocks (acting out words)
  - Drawing pictures of silly words created in SpeechBlocks
  - Acting out sentences (or stories) constructed in SpeechBlocks
- Co-creating stories and/or characters
  - Making up songs and playing them by tapping the lyrics
  - Telling a story together and writing the character names in SpeechBlocks
- Encouraging the parent/child to use their environment
  - Go on a word scavenger hunt and make all the words you see
  - Use SpeechBlocks to sound-out new words in books, signs, etc. (and remix and play with them)
  - Go around your house and try to spell all the words you see that start with a certain letter.
  - Share books or websites that are appropriate and relate to children's interests, and encourage shared reading or playing, and children write down themes or their favorite characters in SpeechBlocks.
  - Or, if children make words about certain themes, characters, books, etc. You can send parents references for stories or related resources that they can engage with their children (outside of the app).
- Referring to the list of interests that was collected during the workshop
  - What activities are children interested in, and how can you combine that with their play in SpeechBlocks for a unique activity?
- Reference or use any trends in popular TV shows, events, or books that are current to create updates.
- Talk with other coaches about examples of updates they have created, and you can always ask the coach coordinators if you need help.

What are some examples of suggested activities?

1. Using past-play in SpeechBlocks to reinforce the learning:

> Sofia made the word BATMAN, which is the name of a superhero! She then created the words BATMOM and BATDAD. For a fun activity, you and Sofia could try brainstorming new characters that have "bat" in them, and Sophia could write her favorites in SpeechBlocks.

2. Using past play and automatic learning goals to inform the activity, and aligning the activity with the suggested words and prompt sent to the child:

> By making the words CAP, LAP, and MAP, Sophia made rhyming words with the letter pattern 'ap'! For a fun activity, you and Sophia could explore adding an 'e' to the end of her three-letter words to hear how the middle vowel changes its sound. To help Sophia get started, we suggested the words "cape" and "tape".

What about Lack-of-Activity updates?

If a child has not played in more than 7 consecutive days, coaches must send a Lack-of-Activity (LOA) update. These are updates that inform the parent that the child has not played in awhile, and then suggests an activity to inspire different ways for children (and children and families) to play with SpeechBlocks. For LOA updates, you still want to base the update on past play, even though you are not giving an update about a particular play session. For example, if a child has not played in over 7 days, but the last time they played, they made a lot of rhyming words, then you might want to write a LOA update like, "Sofia hasn't played with SpeechBlocks in a while. I noticed that she likes making rhyming words. For a fun activity, you could try challenging her to a rhyming game by asking her to pick an object in the room, and then together come up with as many words that rhyme with that object. Sofia can write her favorite in SpeechBlocks!"

However, sometimes there is not a lot of play to base these activities on. This is when it is important get creative. Maybe the child is having a hard time knowing how to get started in SpeechBlocks. SInce there is not a lot of past play to build upon, coaches can refer to some of the interests that the child has expressed (during the workshop), and use those to come up with some ideas to inspire activities that encourage play and exploration.

How do coaches create and send activities?

The activity is composed in the same place where the update is composed within the Coaching Console. After selecting a theme and writing the update in the textbox under "compose update", the coach will write in the activity. The sentence for the activity usually is structured like, "**For a fun activity, you could try...**".

Once the activity is written and the update is composed, the coach must check the checkbox under the update textbox that says "This update contains an activity". This is important because it helps the system keep track of when activities were sent, and will prompt the coach when to send the next activity. It is also important for data purposes to know when activities were sent, and to keep track of LOA updates.

Important reminders about creating activities

- Try to keep activities brief (1-2 sentences at most).
- Try to combine activities with suggested words and prompts, this will help
- Always make sure the activities are in some way related to past play or child interest.
- Always make sure the activity encourages opportunities for further exploration, instead of making it feel like homework.
- If the activity is in pursuit of an automatic learning goal, do not mention that this is a goal to the parent in the update (these are not mandatory, they are just guides).
- Coaches operate in an informal learning environment, and the main goal is to help families understand that learning can occur through play, so rather than trying to align the suggestions and activities towards what the child is learning in school, the coaches should use SpeechBlocks to provide a safe place for children and families to explore, and encourage learning whatever the child wants to learn within that environment. Therefore, the activities are a way for coaches to support the child by using the child-directed goals to inform the type of activities coaches suggest.
- Use language that does not make the parent or family feel that they are bad if they do not complete the activity.
- The activities do not have to be within the app. Although it is nice to have activities that reach back into the app for data purposes, it is also important for parents to see how to relate the learning to their physical context, so make sure to include activities that may occur outside the app as well.

- Activities can encourage any kind of wordplay, and you can encourage families to make real or silly words.
- If there are siblings or other family members that play with the child, you can create activities that engage more than just the parent.
- For families with more than one child in the study, you can combine the activity to have both siblings engage in the same activity so the parent does not receive multiple activities per week.
- Be confident in your ability to create activities, this should be fun! If you are feeling unsure, reach out to the Coach Coordinators, or other coaches in your network for help.

Contact Us!

Coach Coordinators

Questions or feedback about the Coach Training, Coach Console, or the coaching process? Contact the Coach Coordinators!

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Playful Words Team

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playfulwords.org

PLAYFUL WORDS

References

[1] Papert, Seymour. (1980). Mindstorms: Children, Computers, and Powerful Ideas Basic Books.

[2] https://scratch.mit.edu/

[3] Vygotsky, L. S. (1967). Play and its role in the mental development of the child. Soviet psychology, 5(3), 6-18.

[4] Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. American psychologist, 32(7), 513.

[5] Guernsey, L., & Levine, M. H. (2015). Tap, click, read: Growing readers in a world of screens. John Wiley & Sons.

[6] Takeuchi, L., & Stevens, R. (2011). The new coviewing: Designing for learning through joint media engagement. In New York, NY: The Joan Ganz Cooney Center at Sesame Workshop.

[7] Lillard, A. S. (2016). Montessori: The science behind the genius. Oxford University Press.

[8] Ivan Sysoev, Anneli Hershman, Susan Fine, Claire Traweek, and Deb Roy. (2017). SpeechBlocks: a Constructionist Early Literacy App. In Proceedings of the 16th International Conference on Interaction Design and Children (IDC). ACM, Palto Alto, CA, pp. 248-257.

[9] Deacon, S. H., & Kirby, J. R. (2004). Morphological awareness: Just "more phonological"? The roles of morphological and phonological awareness in reading development. Applied psycholinguistics, 25(2), 223-238.

[10] Nagy, W., Berninger, V. W., & Abbott, R. D. (2006). Contributions of morphology beyond phonology to literacy outcomes of upper elementary and middle-school students. Journal of Educational Psychology, 98(1), 134.

[11] http://www.ntatutor.com/code-of-ethics.html

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