## This is a picture of the CS For All logo.

**Lesson created by the GMU-ODU CSforAll Team. For more information about**

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| **Lesson 2: Sequencing** | | **Grade Level: K** |
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| **Concept: Sequencing** | | |
| **Vocab:**   * Sequencing * Debugging | | |
| **Summary:** In this lesson, students will learn what is a sequence in a story and how to put the sequence into the right order by debugging. They will also take a quick look at the ScratchJr coding blocks. | | |
| **Lesson Objectives (learning targets): I can…**   * Ask and answer questions about a story * Retell a story with beginning, middle, and end * Sequence a story with a beginning, middle, and end * Debug a story * Put a story in the correct sequence   NOTE: This list can be narrowed depending on teacher choice and pacing. Giving students multiple ways to “show what they know” creates a more inclusive, UDL framework. | | |
| **VDOE English Standard(s)** | **Computer Science Standard(s)** | |
| K.1 The student will demonstrate growth in the use of oral language.   1. Listen to a variety of literary forms, including stories and poems. 2. Participate in a variety of oral language activities including choral and echo speaking and recitation of short poems, rhymes, songs, and stories with 3. repeated word order patterns.   K.9 The student will demonstrate comprehension of fictional texts.  d) Begin to ask and answer questions about what is read.  e) Retell familiar stories, using beginning, middle, and end. | K.1 The student will construct sets of step-by-step instructions (algorithms) either independently or collaboratively including sequencing that emphasize the beginning, middle, and end.  K.2 The student will construct programs to accomplish tasks as a means of creative expression using a block based programming language or unplugged activities, either independently or collaboratively, including sequencing, emphasizing the beginning, middle, and end.  K.3 The student will create a design document to illustrate thoughts, ideas, and stories in a sequential (step-by-step) manner (e.g., story map, storyboard, and sequential graphic organizer). | |

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| NOTES: In preparation for this lesson, students should become familiar with 3-4 nursery rhymes (see Picture Cards for corresponding text ideas) or one simple storybook (be sure to adapt lesson resources to your selection).  Teaching the skill of retelling is best supported when students are highly familiar with a story or nursery rhyme and have internalized the plot. |

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| **Materials** |
| * Teacher slides (see website) * A class copy of *Humpty Dumpty* on [sentence strips](https://www.dropbox.com/scl/fi/ky4n1vey0wypx4nj4qdnm/Humpty-Dumpty-sentence-strips.docx?dl=0&rlkey=w5vtgs916u7p7sezy0hszu33g) or displayed on the board * Code [Blocks](https://www.dropbox.com/s/nxfzstyioln3zuh/ScratchJr%20Coding%20Blocks.pdf?dl=0) (printed or displayed) * [Word Wall Cards](https://www.dropbox.com/scl/fi/1v8k1on9x7pfn3h347149/K-Word-Wall-Cards.docx?dl=0&rlkey=kh150d2utz61qi6jkmjap02is) * Nursery Rhyme [Picture Cards](https://www.dropbox.com/s/s43gjzmlxprfsfd/SF%20Nursery%20Rhyme%20Cards.pdf?dl=0) (several sets) * [Student Checklist](https://www.dropbox.com/scl/fi/ip131737e9z7ygng4njbb/GKL2-Student-Checklist.docx?dl=0&rlkey=z9glzrf0tum071qelpp25kmvp) |

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| **Lesson Structure and Activities** |
| **Warm-up/Bell Ringer Activity: (5-10 min)**  **NOTE: All slides for this lesson are scripted so that, if needed, you can see exact definitions and instructions for teaching this lesson in the notes at the bottom of the teacher slide deck.**  Review the content related to patterns from the last lesson. Show the “computer science”, “computer”, and “pattern” word wall cards . |
| **Introduction: (10 min)**   * Listen to a song, ask students to think about the pattern of the song and notice what happens at the beginning, middle, and end of the song. * Engagement & Interest: play “Milkshake” by Koo Koo Kanga Roo (3 minutes) * Guide students to think about the beginning, middle, and end of the song. What was at the beginning/middle/end? |
| **Guided Instruction: (15 min)**   1. Play Beginning, Middle, End game: retell each part of the Three Little Pig story (*You are welcome to use familiar stories that your class has recently read/studied in Reading or Writing Workshop.*). Use three fingers to indicate the beginning, middle and end. 2. Have students try retelling the story with a partner or independently. Turn and Talk. 3. If time permits, try another story (Goldilocks and the Three Bears) in the same way. 4. Have students try retelling the story with a partner or independently. Turn and Talk. 5. Introduce Sequencing and Debuggingand show students [sequencing word wall card](https://www.dropbox.com/scl/fi/1v8k1on9x7pfn3h347149/K-Word-Wall-Cards.docx?dl=0&rlkey=kh150d2utz61qi6jkmjap02is) and debug [word wall card](https://www.dropbox.com/scl/fi/1v8k1on9x7pfn3h347149/K-Word-Wall-Cards.docx?dl=0&rlkey=kh150d2utz61qi6jkmjap02is)) 6. Read Humpty Dumpty and Retell: read the story together and look for what happens at the beginning, the middle, and the end.   Display a copy of “[Humpty Dumpty](https://www.dropbox.com/scl/fi/ky4n1vey0wypx4nj4qdnm/Humpty-Dumpty-sentence-strips.docx?dl=0&rlkey=w5vtgs916u7p7sezy0hszu33g)” in a place where students can see and hear the poem. You may even consider giving a copy to each student to follow along.  Pair students with a partner (allow working independently) and cue them to begin retelling the nursery rhyme across their fingers. Circulate as students retell to listen in, encourage them to retell it across their fingers, and ensure that they’re telling the story in order. |
| **Guided Practice & Independent Practice: (30 min)**   1. **Practice Debugging: display mixed-up** [picture cards](https://www.dropbox.com/s/s43gjzmlxprfsfd/SF%20Nursery%20Rhyme%20Cards.pdf?dl=0) that match Humpty Dumpty and guide students to fix the sequence of the cards one by one. Let them turn and talk to figure it out in the process.      1. **Practice Retelling and Sequencing with Pictures:**   *We have provided resources for* [*nursery rhyme sequencing*](https://www.dropbox.com/s/s43gjzmlxprfsfd/SF%20Nursery%20Rhyme%20Cards.pdf?dl=0) *during independent practice. It may be helpful to ensure that students are familiar with these nursery rhymes before this lesson. Or, you may create your own sequencing activities aligned with a story of your choice.*  *Distribute sequencing cards so that students all have cards to the same nursery rhyme, or distribute sequencing cards for a variety of the included nursery rhymes if your class is familiar with them. Allow students to continue working in pairs in order to build vocabulary and encourage troubleshooting during the sequencing activity.*   1. Instruct students to work in pairs to put the nursery rhyme in the correct sequence. 2. Explore Coding Blocks: show coding blocks on the [word wall card](https://www.dropbox.com/scl/fi/1v8k1on9x7pfn3h347149/K-Word-Wall-Cards.docx?dl=0&rlkey=kh150d2utz61qi6jkmjap02is) and examples of coding [blocks](https://www.dropbox.com/s/nxfzstyioln3zuh/ScratchJr%20Coding%20Blocks.pdf?dl=0) here. Ask students to work in pairs to try to find the correct blocks to make Humpty Dumpty walk in a square. |
| **Wrap up: (2 min)**  Review what we learned about sequence and debug.  Optional: Hand out a copy of the [student checklist](https://www.dropbox.com/scl/fi/ip131737e9z7ygng4njbb/GKL2-Student-Checklist.docx?dl=0&rlkey=z9glzrf0tum071qelpp25kmvp) to each student OR display it on the board. Talk about each activity you did and have students check off their progress as you talk through each one. |
| **Assessment Strategy:**  While students are working with a partner to debug the sequence, circulate to ensure that students are a) retelling parts of the story to guide their thinking, b) showing evidence of debugging the sequence, finding where the story is out of order, and c) retelling the story in the correct order, either across their fingers or by pointing to the pictures. |

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| ***Extension Ideas:*** | * **Art:** Provide bingo dotters, stickers, watercolors, or finger paints. Allow children to explore making patterns with the materials, guiding them, and modeling as necessary. * **P.E.:** Play a game of “follow the leader.” Jump, hop, run in place, crawl, etc. using a specific pattern and have your child follow you. Switch roles and follow your child. (Ex: ‘clap, clap, stomp, clap, clap, stomp’) * **Music:** Young children typically enjoy clapping games that require observation, mimicking of the sound pattern, and opportunities to lead the patterns themselves. Model a clapping pattern for them to copy and give them a turn, simultaneously teaching the pattern of turn-taking. * **Writing:** To combine word families and handwriting skills, invite children to choose two markers or colored pencils to use. They can practice rainbow writing words from the word family in different color patterns. Some students may elect to use 3 or 4 colors; encourage them to remember the color pattern they’ve picked as they write. * **Science:** Collect a wide assortment of natural materials, including leaves, sticks, rocks, shells, etc. Invite children to make patterns with the materials. * **Social studies:** Community helpers often have uniforms that tell other people how they help. Show children pictures of community helpers. What patterns do they notice? How are the uniforms the same and different? * **Reading:** There aremany types of word families that have different patterns at the end of the word that helps us to read and spell. Hone students’ visual discrimination by asking them to find words from the same family in a poem, book, or sort that end the same way. |
| ***Alignment:*** | This is the second lesson in the unit. Lesson 3 is Decomposition and Abstraction. |
| ***Supplemental Resources:*** | Slides 50 - 62 describe an additional activity that you can either complete with the class or assign asynchronously.  **Center Idea: Draw and Write a Story Sequence**  If time allows, or you wish to extend the lesson over multiple days, consider allowing students to draw and write a story sequence. You may choose to use [this graphic organizer](https://www.dropbox.com/scl/fi/8a983vb3fnes7idn36wko/BME-Graphic-Organizer.docx?dl=0&rlkey=r0enikemvqzpeq549o819mktd) for students to sequence and retell the beginning, middle, and end of a story, or you could simply fold a piece of paper into thirds. Either way, encourage students to retell the story aloud to a partner, pointing to each picture or using their fingers to highlight the beginning, middle, and end of the story. |