English-Language Arts Lesson Plan: Kindergarten
Coding with Cornell: Data Types

Coding with Cornell: Data Types (Part One)

Grade Level: Kindergarten

Common Core National Standards Alignment

- **RL.K.1:** With prompting and support, ask and answer questions about key details in a text.
- **RL.K.7:** With prompting and support, describe the relationship between illustrations and the story in which they appear.
- **RF.K.2:** Recognize and produce rhyming words.

Lesson Objectives & Relevance

Understanding how words and numbers function builds foundational literacy and numeracy skills. Recognizing patterns and structure in text supports **reading development,** while discussing illustrations deepens **comprehension**. These skills prepare students for future reading and problem-solving activities.

By the end of the lesson, students will:

- Listen to and engage with *Coding with Cornell: Data Types* through discussion and guided activities.
- Recognize rhyming words and patterns in the text.
- Identify simple data types (numbers and words) in the story.
- Describe how illustrations connect to the text.
- Participate in a hands-on sorting activity to classify numbers and words.
- Express understanding by drawing or dictating their own examples of data types.

Resources and Materials

- *Coding with Cornell: Data Types* book
- *Coding with Cornell: Activity Workbook*
- Pictures of apps or games students may be familiar with
- Cut-out number and word cards for sorting activity
- Coloring sheets with number and word illustrations

English-Language Arts Lesson Plan: Kindergarten
Coding with Cornell: Data Types

Vocabulary Words from the Text

- **Coding** – Writing instructions for a computer.
- **Data** – Information that a computer uses.
- **Integer** – A whole number (like 1, 2, or 3).
- **String** – A word or a sentence in coding.
- **Float** – A number with a decimal (like 1.5 or 3.1).
- **Boolean** – A type of data that is either **True** or **False**.
- **Numbers** – Digits like 1, 2, and 3 used to count.

Lesson Introduction

- Have your students gather in a circle.
- Ask your students to brainstorm what they know about computers (or tablets) and how they use them.
    - **Guidance:** Often, students have used tablets to play games, watch videos on YouTube Kids, or complete school assignments. Each of the applications ("apps") used for these activities were built by coders using a coding language like Python.
- Show some pictures of apps that students may be familiar with to stimulate prior knowledge. Allow students to share what they know about computers and/or apps.
- Ask students the following questions:
    - Which games do you play on your computers or tablets?
    - When you are playing a game on the computer, how do you think the computer knows your name or keeps your score?
    - **Guidance:** In Python, strings are used for things like names, while integers are used to keep score, or maintain counters—such as how many times a game has been played.

Lesson Activities/Tasks

Activity 1: Read-Aloud and Discussion

- Read *Coding with Cornell: Data Types* aloud, showing the illustrations and emphasizing rhyming words.
- Pause at key points and ask:
    - "What do we call whole numbers like 1, 2, and 3?" *(Integers!)*
    - "What do we call letters and words in Python?" *(Strings!)*
    - "Can you find two words in the book that rhyme?" *(Help students identify rhyming pairs.)*

Activity 2: Draw My Creation

- Using the illustration of Cornell and Cori's mother on her phone and their father playing video games ask, "What do you see in this picture? How does it help us understand what coders get to build?"
- After students have grasped an understanding of what can be built with coding, ask students to draw an image representing a game or app they have played with that was likely built by a coder.
- **Guidance**: This activity will help students understand that *all* games and apps that they interact with were built using coding with languages such as Python.

Activity 3: Sorting Game – Data Type Detective

- Create cards with printed whole numbers, such as 1 – 10, and cards with words that students are familiar with, such as "apple," "banana," "cat," and "dog." Spread the cards out on a large table, then ask students to sort the cards into two piles: Integers (numbers) and Strings (words).
- **Guidance**: This activity will help students learn how to categorize numbers and words, recognizing them separately as "integers" and "strings."

Activity 4: Rhyming Word Circle

- Have students stand in a circle, while you stand in the middle of the circle. Re-read *Coding with Cornell: Data Types*, this time pausing when you find the first set of rhyming words (*game/same)*.
- Starting from the beginning of the circle, have each student share a word that rhymes with the pair (*name, blame, frame, etc.)*.
- When students are out of rhyming words, continue reading *Coding with Cornell: Data Types* until you find the next pair of rhyming words. Continuing with the next student, have each student share a word that rhymes with the pair. Continue this activity until you have completed a second reading of *Coding with Cornell: Data Types.*

Activity 5: Workbook Integration

- Have students complete several worksheets in the Coding with Cornell Activity Workbook as classroom and homework activities, including:

- The Data Types Book Cover coloring sheet
- *Python Coloring Sheet*
- *Learn About Data*
- *Data Types – Integers* tracing sheet
- *Data Types – Strings* tracing sheet
- *Data Types – Booleans* tracing sheet
- *Data Types – Floats* tracing sheet

Lesson Conclusion & Assessment

Wrap-Up Discussion:

- "Who can tell me one data type we learned today?" (*Integers, Strings, Floats, Booleans*)
- "Why do we need different types of data?" (Guide students to understand that numbers and words help computers work.)
- "How do rhyming words help us remember things?"
- "How did the pictures help us understand the story?"