Authors: Ayesha Binte Mostofa, Jackson Bibbens, Carter Luck, Sribatscha Maharana

Course number and name: COMPSCI 250 – Introduction to Computation

Content Area: Regular Expressions

Title of RLO: Interactive Regex Learning Game

Objectives/Goals:	
Knowledge: *(Students should know...)* ● Basic syntax and usage of regular expressions.	**Skills:** *(Students should be able to…)* ● Construct regex patterns to match given strings. ● Apply regex for validation tasks ● Debug and refine regex patterns based on feedback.

Dispositions: *(Students should adopt...)*

● Attention to detail when analyzing string patterns.
● Persistence in testing and refining regex patterns.

Prior Knowledge/Skills that students should have:

● Basic understanding of pattern-matching concepts.

Vocabulary	Resources Needed	
Content Vocabulary *(any special terms students should know)* **Regex, pattern match, String**	**Content Resources** *(books, articles, websites, handouts, etc.)* **Book:** A Mathematical Foundation for Computer Science	**Web resources:** **Regex101:** Powerful online tester with live regex explanation

	Note: The textbook uses the symbol **"+"** to represent logical **OR**, whereas in traditional regular expressions, **"|"** is used for this purpose. The game follows the textbook's convention to remain consistent with course materials. **Website:** [RegexOne](#)	
Computer Science Vocabulary *(any special terms students should know)* String, function, algorithm, validation, feedback loop	**Hardware:** Computer with internet access	**Other Manipulatives:** N/A

Plan for Instruction

Crafting: *(Teacher Lead Instruction) Presentation of new material – Include script for lesson.*

TEACHER ROLE	STUDENT ROLE	Checks for Understanding
What is the teacher doing? ● Introducing the concept of Regular Expression. ● Provide examples and demonstrate how to interpret regex patterns. ● Introducing the Regex game and explaining game structure.	**What are the students doing?** ● Follow instructions and ask clarifying questions. ● Take the Pre-Quiz to assess baseline knowledge.	● Observe students attempting initial quiz problems. ● Ask brief questions about regex concepts.

Composing Meaning: *(Independent)Are students working by themselves, with partners, or in groups. –*		Checks for Understanding
What is the teacher doing? ● Monitor students as they play the Password Game levels. ● Provide hints or clarifications as needed.	**What are the students doing?** ● Complete the 10 Password Game levels individually. ● Apply feedback to refine regex solutions.	● Track level completion and in-game scoring. ● Observe students' use of regex constructs and problem-solving strategies.

Processing: *(How will students reflect on today's lesson and make connections to the objectives/goals and essential questions?)*		**Checks for Understanding**
What is the teacher doing? ● Review Post-Quiz results and compare to Pre-Quiz scores. ● Discuss common mistakes and successful strategies with students.	**What are the students doing?** ● Reflect on improvements and challenges faced. ● Summarize what they learned and how their regex skills improved.	● Compare Pre-Quiz and Post-Quiz scores. ● Ask students to articulate key learning points from the game.
Assessment/grading: ● Pre-Quiz and Post-Quiz scores for measuring learning gain. ● Completion of Password Game levels. ● Participation and engagement during instruction and game play.		