Grades 6-7 Lesson Plan

Lesson 1 | Intro to Evaluating Algebraic Equations

Lure of the Labyrinth: Vending Machine can be used to introduce expressions and equations. The game is an opportunity to experiment and discover intuitive math strategy skills *before* learning pre-algebra more formally.

	Common Core State Standards
Game Level 1 'Break Room'	Intro to Evaluating Algebraic Equations ● *6.EE.A.2*: Write, read, and evaluate expressions in which letters stand for numbers. ● *6.EE.B*: Reason about and solve one-variable equations. ● *7.EE.B*: Solve real-life and mathematical problems using numerical and algebraic equations.

Materials

- Devices (e.g. laptops or tablets) for students to play the game on. Small groups of 2-3 students can share each device. You may have to confirm that the game is not blocked on school devices.
- Scratch paper for students to write on.

Preparation

1. Play through Level 1 and Level 2 of the Lure of the Labyrinth: Vending Machine game.
2. We recommend using the *5 Practices for Orchestrating Productive Mathematics Discussions* (Smith & Stein, published by NCTM) to prepare for in-class discussions. You can find a planning template with suggested guiding questions here: Teacher Planning Template.
3. For more background, you can watch the game's intro and level explainer videos here:
    - Intro Video
    - Level 1 Explainer Video
    - Level 2 Explainer Video

Lesson Plan

1. **Introduction**: Briefly introduce the activity. Emphasize that students will need to figure out the rules of the game. It's okay if students don't finish the game - the important part is to experiment, restart, and try different strategies.
2. **Arrange student groups**: Arrange students into small groups of 2-3. Each student group can share 1 device (e.g., laptop or tablet). Give students scratch paper to write on.
3. **Play Level 1**: Give students 10-15 minutes to play Level 1 ('Break Room') of the game. If groups finish early, they can try Level 2 ('Manager's Lounge'), which is a challenge level. As students play, circulate the room to see what strategies students are using.
4. **Class discussion**: Regroup the class. Ask a few student groups to share out what strategies they tried, and what worked. Ideally, pick a few groups that you observed using different strategies.
5. **Debrief**: The strategies that students discovered through the game are key aspects of pre-algebraic thinking. Students should keep an eye out for similar problem solving throughout the rest of this unit.