The Signal Vault:
A VEX AIM Escape Room with CS Concepts

Alaina Haws
Senior Education Developer, VEX Robotics

VEX AIM

Workshop Goals

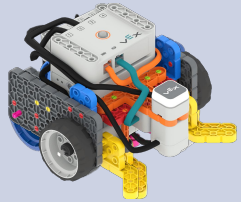
- Solve escape room-style challenges using VEX AIM and VEXcode.
- Explore how sequencing, selection, and iteration drive problem-solving.
- Connect hands-on puzzle experiences to core computer science concepts.
- Analyze how each activity can be scaffolded for different learners.
- Identify how theming and robotics can make computer science concepts more engaging and accessible for students.

The VEX Continuum

VEX 123

Coding Starts Early

Ages 4+



VEX GO

STEM Starts Early

Ages 8+

VEX AIM

Real World Coding

Ages 8+

VEX IQ

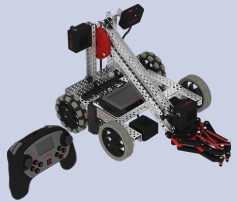
Applied STEM Learning

Ages 11+

VEX EXP

Real World STEM for Classrooms

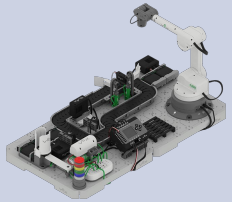
Ages 14+



VEX V5

Real World STEM for Competition

Ages 14+



VEX CTE

Workforce Readiness

Ages 14+

VEX AIR

STEM Skills Take Flight

Ages 14+

VEX CODE VR

Virtual Robot Coding

Ages 8+

Problem-Solving

Collaboration

How do escape rooms relate to computer science?

Make abstract concepts concrete

Engagement

Something has gone wrong…your AIM robot is trapped!

The only way out? *Solve the puzzles.*

Follow the correct sequence
Make the right decisions
Repeat actions to unlock clues

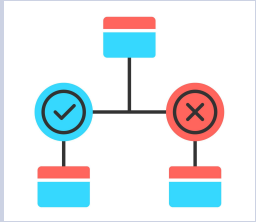
Each challenge reveals part of the solution.
Solve them all to escape!

Will your robot make it out?

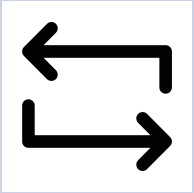
Elements of an Algorithm:

- Sequence

- Selection



- Iteration



Puzzle 1: Sequence

Solve my combination lock!

1. Turn on your robot and controller.
2. Run the Combination Lock project.
3. Follow along with me to solve the first number!
4. Can you figure out the rest of my combination?

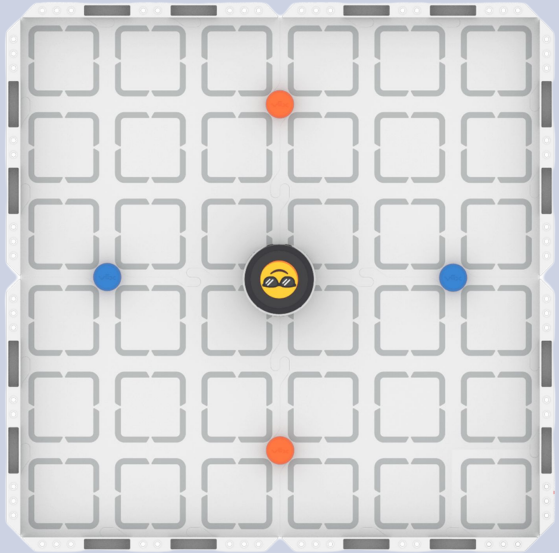
Let’s take a peek at the code!

How does this relate to the concept of sequence?

Puzzle 2: Selection

Solve a hidden item placement puzzle!

1. Run the Placement Puzzle project on your robot.
2. Place a cargo object in each of the cardinal directions around the robot.
3. Press the screen to test your placement!
4. Got something wrong? Move the objects and press the screen again for another scan.



Let’s take a peek at the code!

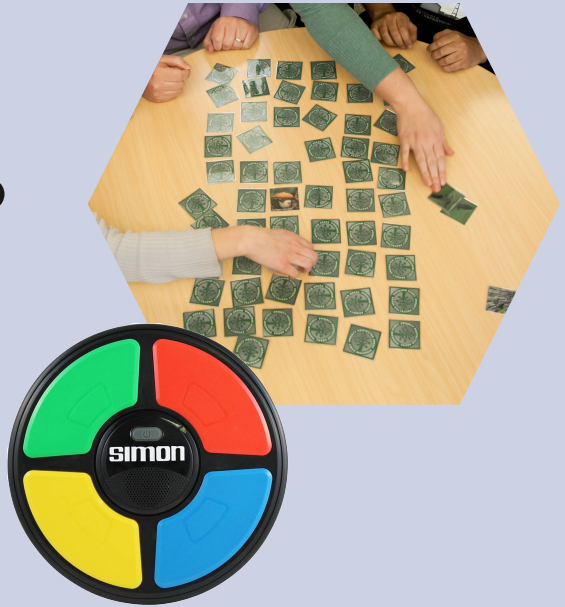
How does this relate to the concept of selection?

Puzzle 3: Iteration

Solve my memory challenge!

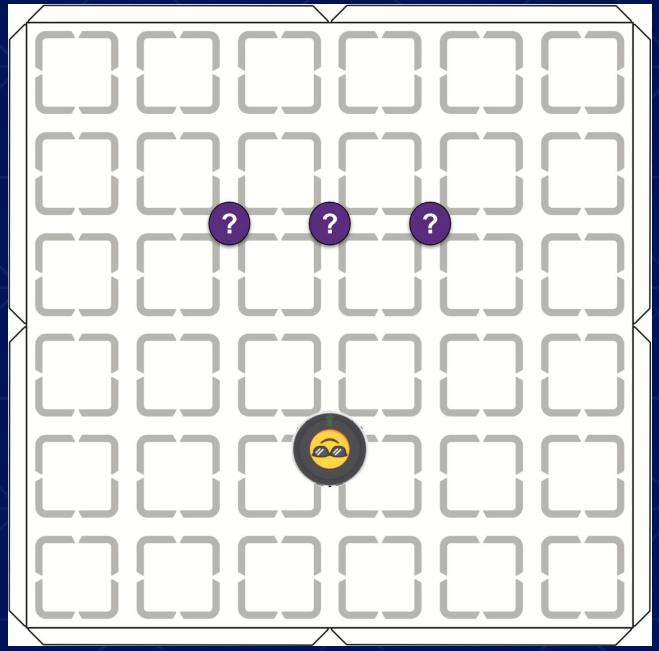
Run the Simon Says project on your robot. Follow the instructions on screen to complete the challenge!

- Press the screen when you are ready to start.
- Listen and watch the 4 notes played by the robot.
- When it's your turn, press the same notes in order!



Let’s take a peek at the code!

How does this relate to the concept of iteration?



We’re out of time!

Let’s take all of the clues from the previous puzzle and unlock the key so we can make our final escape.

Stay Connected

Let's Connect!

Tag me in the **VEX PD+ Community!** @AlainaHaws

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