

Looping Mission w/ Drones

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Objectives:

Students will be able to:

- Identify the benefits of using a loop structure instead of manual repetition.
- Differentiate between commands that need to be repeated in loops and commands that should be used on their own.

Vocabulary

- **Loop** - The action of doing something over and over again.
- **Repeat** - To do something again.

Introduction

Remind students of the work they did in the previous Drone Legends mission. Open a discussion about what they learned, why they think it might be useful, and if they had any fun. Here are some discussion starters. This mission highlights the power of loops with creative and personal designs.

Offered as a project-backed sequence, this progression will allow students to build on top of their own work and create amazing artifacts.

- What did you learn in the “Mt. Erebus” mission?
- What are the three main components of a loop?
- Why do you think a loop might be helpful in programming?
 - o Many students might not know an answer to this. Let them hypothesize, but don’t dwell on this question for too long.
- Did you have fun learning about loops? Why or why not?
- Are you excited to use loops in Drone Legends missions?

Main Activity (45 min)

Split up the students of your class into groups of 2 or 3.

Each member begins with one of three roles, Pilot in command, Visual Observer, and Safety Officer. These roles will rotate throughout the lesson. Ideally have the groups be the same from the “Mt. Erebus” mission. Explain the scenario of the drone rescue mission to students making sure to include its relevance to loops. The use of looping will be required to complete this mission successfully. After explaining and answering any questions, allow students 15 minutes to plan their rescue mission.

Begin Activity (mission)

Wrap Up (15 min)

Journaling

Having students write about what they learned, why it’s useful, and how they feel about it can help solidify any knowledge they obtained today and build a review sheet for them to look to in the future.

Journal Prompts:

- What was today’s lesson about?
- How did you feel during today’s lesson?
- How is a [for](#) loop different from a [repeat](#) loop?
- Why do you think loops could be useful?

Standards Alignment

3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. [Clarification Statement: Emphasis is on systems of information transfer.]