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| **Solving Problems** |

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| **Your Tasks (Mark these off as you go)** |
| Complete the problems  Pair up and reflect  Compare algorithms  Wrap up  Receive credit for this lab guide |

* **Complete the prompts**

Today we are going to explore how computer scientists think about problem-solving. An important skill we will explore will be recognizing patterns and similarities.

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| Review the problems below for one minute, and then move around the room and collect the information needed to solve the problems. | | |
|  | **Prompt** | **Information** |
| 1 | Find a person whose birthday is before yours |  |
| 2 | Find a person whose birthday is after yours |  |
| 3 | Find the person whose birthday is the closest before yours |  |
| 4 | Find the person whose birthday is the closest after yours |  |
| 5 | Find the person whose birthday is closest to yours |  |
| 6 | Find the person with an equal number of birthdays before and after theirs |  |
| 7 | Find the two people with the closest birthdays in the room |  |
| 8 | Find the shortest period of time in which three people have birthdays |  |
| 9 | Find the shortest period of time in which four people have birthdays |  |
| 10 | Find the longest period of time in which no one has a birthday |  |

* **Pair up and reflect**

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| --- | --- |
| Locate the person you found for prompt 5 above. Write their name below. Indicate one fun fact about that person. | |
| Person |  |
| Fun fact |  |

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| Discuss the following prompts with your group. Write your responses below. |
| How did you go about solving each of the problems? |
|  |
| For which problems did you need to do something similar to solve them? For examples problems 1 & 2 are very similar. |
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* **Compare algorithms**

We just thought about whether problems are similar. Now we're going to look at whether we're solving the same problem.

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| Consider the algorithms below. Use the markers you have been provided to trace the algorithms on your desk. |
| Diagram  Description automatically generated |

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| Discuss with your group which of these algorithms are like one another? How did you decide that? |
|  |

* **Wrap-up**

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| In the first part of this activity, you had to solve a problem. In the second part of this activity, you explored algorithms. In the space below write a definition for each of these terms. | |
| **Problem** |  |
| **Algorithm** |  |

Pick a person in your group to share out the following prompts you answered above.

* Which problems in the first part of this activity were similar? Explain.
* Which algorithms were similar? Explain.
* What is a problem?
* What is an algorithm?
* What is a fun fact about yourself? What is fun fact about each person in your group?
* **Receive credit for this lab guide**

Submit this portion of the lab to Pluska to receive credit for the lab guide.