

## Lesson 17: Minimal Spanning Trees

### Overview

*This unit introduces students to the idea of minimal spanning tree and how graphs can be used to solve problems.*

### Lesson Summary

- CS Unplugged: The Muddy City activity
- CS Unplugged: Muddy city activity extension.
- Have the students look up and attempt to solve the traveling salesman problem.

### CS Content

*Spanning Trees.  
Problem Solving using a graph.*

### Objectives

**Students will be able to:**

- Solve a minimal spanning tree.
- Draw a graph to solve a problem.
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### Materials and Prep

- Cs Unplugged: Muddy City
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### Resources

#### Student Documents

- CS Unplugged: Muddy city.
- <http://mathworld.wolfram.com/TravelingSalesmanProblem.html>
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#### Code Studio

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#### Video

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#### Assessments

- Completion of the activity.
- Notes on how to solve the traveling salesman problem.
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### Notes

*The Traveling Salesman problem is a good extension for my students who push for more realistic applications.*

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