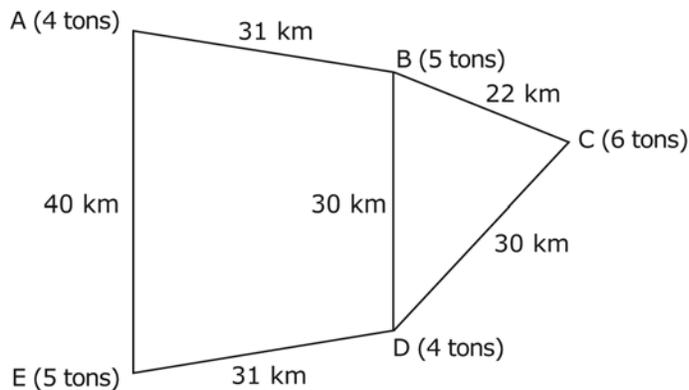


## Let's Build a Facility, But Where?

Recycling, composting, and landfill all deal with public waste disposal. While more and more people are recycling, some materials still end up in landfill sites.



You are a youth member of a waste management committee. Your community currently has five recycling stations. The committee is deciding which recycling station will make the best location for a new processing facility. The committee will base its decision on the following two factors: minimizing the cost and minimizing the environmental impact of transporting waste from the stations to the new facility.



The five recycling stations are located at A, B, C, D, and E. The map shows the tonnage each location can hold.

1. Some committee members feel the most important factor is the total distance between the new facility and the other four stations. In this case, where should the facility be located? Show your thinking.
2. Some other committee members suggest that the best location would require transporting the fewest total tonnes of waste. In this case, where should the facility be located? Show your thinking.
3. The transport trucks can carry only 1 tonne of waste at a time. Use this information, and the information you calculated in #1 and 2, to decide where to locate the new processing facility. Justify your response mathematically.

