

Going to the Zoo Level 2, Sample 1

A



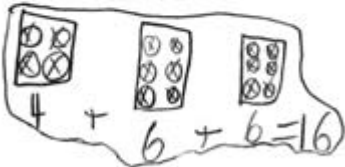
16 people are going to the zoo.

Vans and cars can be used to drive everyone to the zoo.

The most a van can hold is 6 people.

The most a car can hold is 4 people.

How many cars and vans could be used? Show as many ways as you can to organize the 16 people in cars and vans.



B

Explain how you solved the problem.

I used counters. The most a car can hold is 4. the most a van can hold is 6.

## Teacher's Notes

### Problem Solving

- The student selects and applies an appropriate problem-solving strategy that leads to a partially complete and/or partially accurate solution (e.g., in using counters, finds two combinations for 16 that are correct and that relate directly to the problem).

### Understanding of Concepts

- The student demonstrates some understanding of combining numbers to obtain the sum of 16 (e.g., shows three combinations for 16, two of which are more appropriate for the cars-and-vans problem).

### Application of Mathematical Procedures

- The student uses concrete materials and mathematical procedures, making some errors and/or omissions and arriving at a partial or an unclear solution (e.g., two of the solutions include illustrations and addition sentences; no direct reference is made to the number of cars and vans required).

### Communication of Required Knowledge

- The student uses pictures, words, or numbers to describe and illustrate with some clarity the methods chosen for investigating the cars-and-vans problem (e.g., although illustrations are included for two solutions, cars and vans are not identified, making the response unclear).
- The student describes with some clarity the strategy used (e.g., gives a partial explanation of how the problem was solved with reference to the original problem: "I used counters. The most a car can hold is 4. the most a van can hold is 6").

## Comments/Next Steps

- The student should solve other problems where there are multiple combinations to be found and find as many combinations as possible.
- The student needs to develop strategies for ensuring that the work being completed leads to a solution for the given problem.
- The student needs to talk about combinations in relation to the context of a problem (e.g., in this problem, needs to consider whether it would be realistic to take 16 cars or vans, each holding only one passenger).

Going to the Zoo Level 2, Sample 2

A



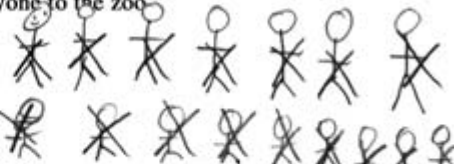
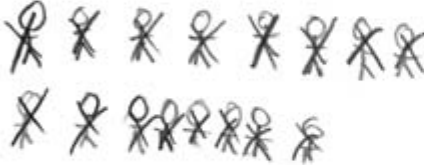
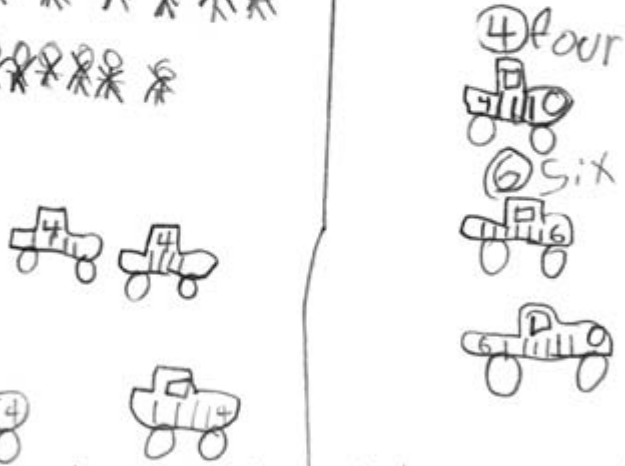
16 people are going to the zoo.

Vans and cars can be used to drive everyone to the zoo.

The most a van can hold is 6 people.

The most a car can hold is 4 people.

How many cars and vans could be used? Show as many ways as you can to organize the 16 people in cars and vans.

We need 4 cars to fit the people.

We need two vans and one car.

B

Explain how you solved the problem.

First we draw cars and vans then second we cross the people and we put the people then we put the number and words.

## Teacher's Notes

### Problem Solving

- The student selects and applies an appropriate problem-solving strategy that leads to a partially complete and/or partially accurate solution (e.g., uses illustrations as “counters” and an elimination strategy to find two combinations).

### Understanding of Concepts

- The student demonstrates some understanding of combining numbers to obtain the sum of 16 (e.g., in the combinations presented, does not recognize that the cars and vans can have empty seats, but does explore the possibility of different combinations:  $6 + 6 + 4 = 16$ ,  $4 + 4 + 4 + 4 = 16$ ).

### Application of Mathematical Procedures

- The student uses concrete materials and mathematical procedures, making some errors and/or omissions and arriving at a partial or an unclear solution (e.g., in the two combinations shown, the computations are correct but are not recorded).

### Communication of Required Knowledge

- The student uses pictures, words, or numbers to describe and illustrate with some clarity the methods chosen for investigating the cars-and-vans problem (e.g., draws 16 people and then crosses them out as a van or car is filled; shows the total number of people in each car or van and provides the appropriate numeral and concluding sentences).
- The student describes with some clarity the strategy used (e.g., explains the elimination strategy: “First we draw cars and vans then second we cross the people and we put the people then we put the number and words”).

## Comments/Next Steps

- The student needs to reread his or her responses to make sure that they are complete.
- The student should use concrete materials to solve problems.
- The student needs to solve similar problems, where multiple combinations need to be found, and to find as many combinations as possible.