

crackers

There was a plate of crackers for Dan, Pam, Tim and Sue to eat for snack. Each of the children were given 2 crackers to eat. There were no more crackers on the plate. How many crackers in all did the children eat?

Crackers

Suggested Grade Span

Grades Pre K–2

Grade(s) in Which Task Was Piloted

Grade K

Task

There was a plate of crackers for Dan, Pam, Tim and Sue to eat for snack. Each of the children were given 2 crackers to eat. There were no more crackers on the plate. How many crackers in all did the children eat?

Alternative Versions of Task

More Accessible Version:

There was a plate of crackers for Dan, Tim and Sue to eat for snack. Each of the children were given 1 cracker to eat. There were no more crackers on the plate. How many crackers were there in all?

More Challenging Version:

There was a plate of crackers for Dan, Pam, Tim and Sue to eat for snack. Dan ate 6 crackers. Pam ate half as many as Dan. Tim ate one more than Pam. Sue ate as many as Pam and Dan combined. There were no more crackers on the plate. How many crackers in all did the children eat?

NCTM Content Standards and Evidence

Number and Operation Standard for Grades Pre K–2

Instructional programs from Pre-Kindergarten through grade 12 should enable students to...

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
 - *NCTM Evidence:* Count with understanding and recognize “how many” in sets of objects.
 - *Exemplars Task Specific Evidence:* This task requires students to count or compute 4 sets of 2.

- Compute fluently and make reasonable estimates.
 - *NCTM Evidence:* Develop and use strategies for whole-number computations, with a focus on addition and subtraction.
 - *Exemplars Task Specific Evidence:* This task requires students to find the sum of 4 sets of 2.

Time/Context/Qualifiers/Tip(s) From Piloting Teacher

This task is considered a short task in that it took my students only one class period in which to complete it.

Links

This task would be a fun, quick task to do just before or after snack time.

Common Strategies Used to Solve This Task

Most students will draw the children holding 2 crackers in their hands. They will then come up with a system for finding a total.

Possible Solutions

Original Version:

4 children \times 2 crackers = 8 crackers

More Accessible Version:

3 children \times 1 cracker = 3 crackers

More Challenging Version:

Dan = 6

Pam = 3 ($6 \div 2$)

Tim = 4 ($3+1$)

Sue = 7 ($3+4$)

Total = 20 crackers

Task Specific Assessment Notes

General Notes: This task requires students to find a method for determining a sum. It is assumed that this task would not be given to students who know addition or multiplication algorithms, as it would not require the student to utilize problem solving strategies.

Exemplars

Novice: The novice will not be able to represent all 4 children, nor 2 crackers for each child.

Apprentice: The apprentice will have a partial solution. The apprentice may be able to represent 4 children, and maybe 2 crackers for each, but the student will not be able to find a correct sum.

Practitioner: The practitioner will have a correct and complete solution, utilizing communication and problem solving strategies.

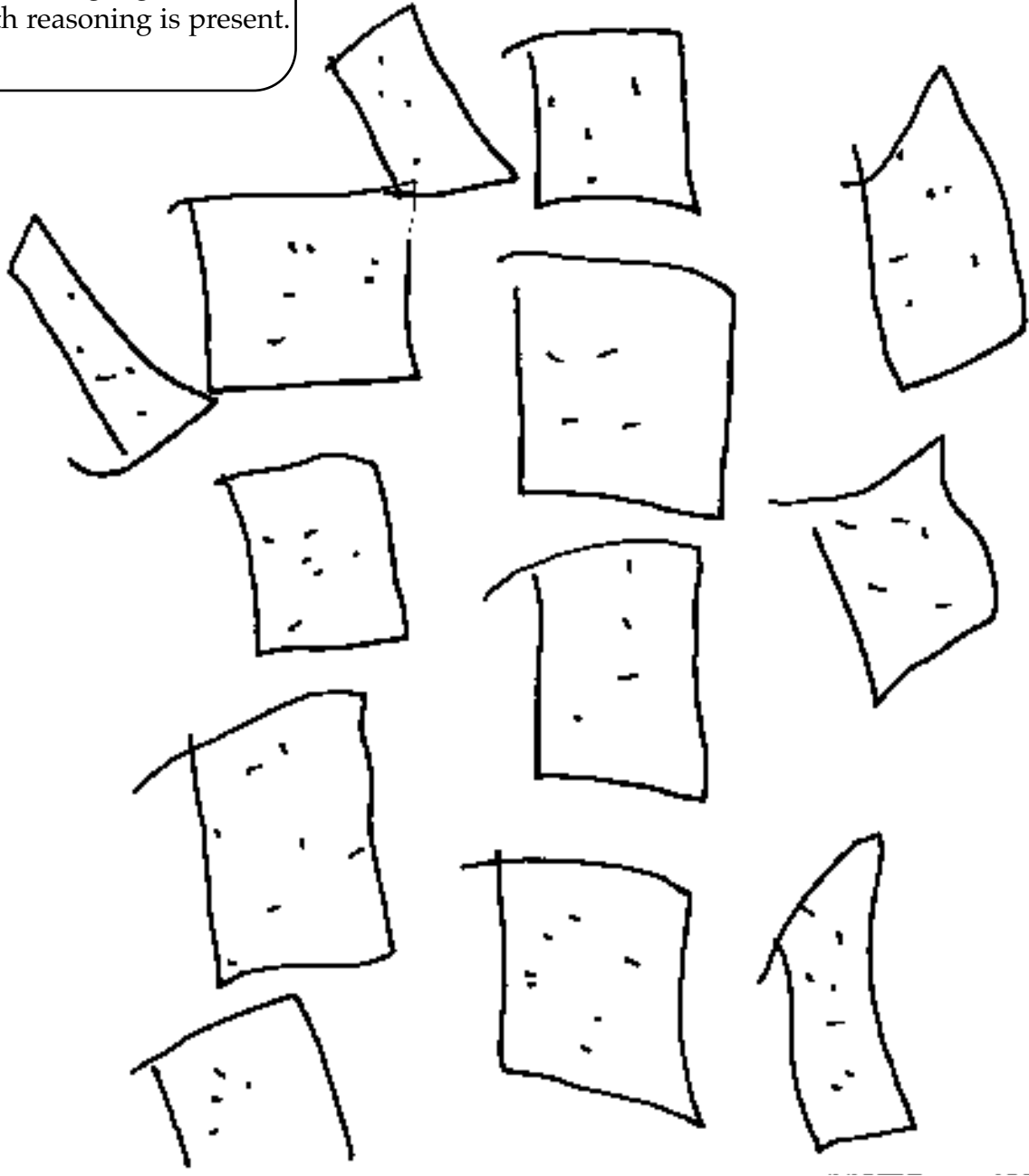
Expert: The expert's solution will be correct and complete, and will contain other aspects of good problem solving such as verifying the solution, writing a rule for solving the task, or extending the solution to include additional children or crackers for each.

Author

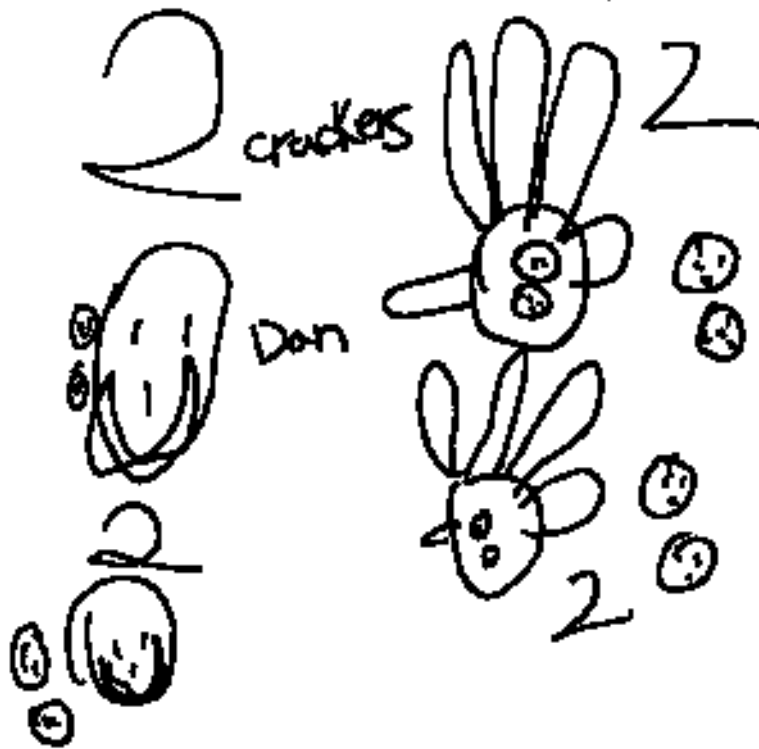
This task was written by **Deb Armitage**, Pre K–8 Mathematics Assessment Consultant at the Vermont Department of Education. The task was piloted by teachers and students in Vermont.

Novice

No evidence is shown of 4 children, nor 2 crackers each.
No math language is used.
No math reasoning is present.



Apprentice

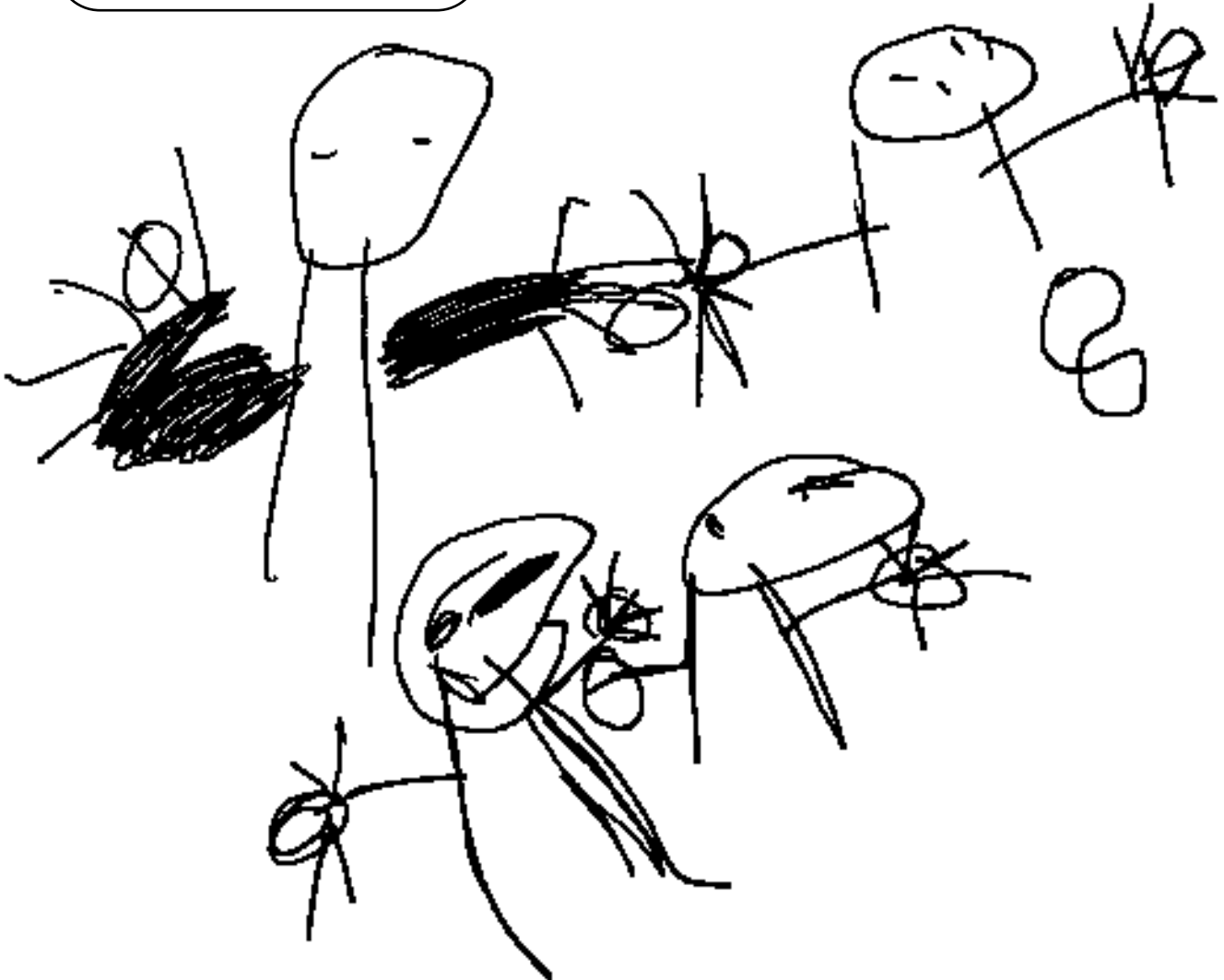


A partial solution is present. The student is able to represent 4 children with 2 crackers each, but neglects to write a total.

Some math language is used. Some correct math reasoning is present.

Practitioner

A correct total of 8 crackers is achieved and noted.



Diagrams are used to solve the task.
Little awareness of the needs of the audience exists.

Expert



Evidence of 4 children with 2 crackers each is present. A correct total of 8 crackers is indicated.



The student extends the solution by including themselves for a new total of ten crackers.