

## Breakfast with Grandmother

It takes Kathy 4 minutes to walk to her grandmother's house, and 4 minutes to walk home. Kathy walked to her grandmother's house every morning for 2 weeks to have breakfast with her grandmother, and then she walked home. How many minutes did Kathy spend traveling to and from her grandmother's house during those 2 weeks?

## Breakfast with Grandmother

### Suggested Grade Span

Grades 3-5

### Grade Level(s) in Which the Task Was Piloted

Grades 2 and 3

### Task

It takes Kathy 4 minutes to walk to her grandmother's house, and 4 minutes to walk home. Kathy walked to her grandmother's house every morning for 2 weeks to have breakfast with her grandmother, and then she walked home. How many minutes did Kathy spend traveling to and from her grandmother's house during those 2 weeks?

### Alternative Versions of the Task

#### *More Accessible Version:*

It takes Kathy 4 minutes to walk to her house grandmother's house, and 4 minutes to walk home. Kathy walked to her grandmother's house every morning for one week to have breakfast with her grandmother, and then she walked home. How many minutes did Kathy spend traveling to and from her grandmother's house during that week?

#### *More Challenging Version A:*

It takes Kathy 4 minutes and 20 seconds to walk to her grandmother's house, and 4 minutes 20 seconds to walk home. For 2 weeks Kathy walked to and from her grandmother's house to have breakfast with her. How many minutes did Kathy spend traveling to and from her grandmother's house during those 2 weeks?

#### *More Challenging Version B:*

On Monday it takes Kathy 4 minutes to walk round trip to and from her grandmother's house. Kathy walked to and from her grandmother's house every morning for 2 weeks. Each day it took Kathy 10 seconds less than the day before to complete her round trip. How many minutes did Kathy spend traveling to her grandmother's house during those 2 weeks?

## NCTM Content Standards and Evidence

### Number and Operation Standards for Grades Pre-K-2

Instructional programs from pre-kindergarten through grade 12 should enable all 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 represent 14 sets of 8 minutes.
- 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 may require students to develop strategies for addition computation.

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

This is a short length task, and may not assess problem solving for students who jump to an algorithm of multiplying 8 by 14. For these students, give one of the two more challenging versions.

### **Links**

This task would link to a unit on families and community.

### **Common Strategies Used to Solve This Task**

Most students in this age group tend to list the 4 minutes to grandmother’s house, and 4 minutes to go back from grandmother’s house 14 times, and then come up with a system for determining the sum.

### **Possible Solutions**

#### *Original Version:*

$$(4 \text{ minutes} + 4 \text{ minutes})(14 \text{ days}) = 112 \text{ minutes}$$

#### *More Accessible Version:*

$$(4 \text{ minutes} + 4 \text{ minutes})(7 \text{ days}) = 56 \text{ minutes}$$

#### *More Challenging Version A*

$$(4 \text{ minutes, } 20 \text{ seconds} + 4 \text{ minutes, } 20 \text{ seconds}) = 8 \text{ minutes } 40 \text{ seconds}$$

$$(8 \text{ minutes } 40 \text{ seconds})(14 \text{ days}) = 112 \text{ minutes, } 560 \text{ seconds} = 121 \text{ minutes and } 20 \text{ seconds.}$$

## *More Challenging Version B*

\* $2450 \div 60 = 40.82$  minutes, or 40 minutes and 50 seconds.

### **Task Specific Assessment Notes**

**General Notes:** Math language you should look for in assessing student work will include language of time. The task does not lend itself well to needing to create math representations, so the student should not be penalized for leaving this out.

**Novice:** Little or no progress will be made toward a solution. No evidence of understanding will be present.

**Apprentice:** The apprentice will have some correct parts. Some correct reasoning will be present, but the answer will be incorrect due to computation or reasoning errors.

**Practitioner:** The practitioner will have an accurate and correct solution.

**Expert:** The expert will have a correct solution, and will go beyond the task requirements to make mathematically relevant observations or connections.

### **Author**

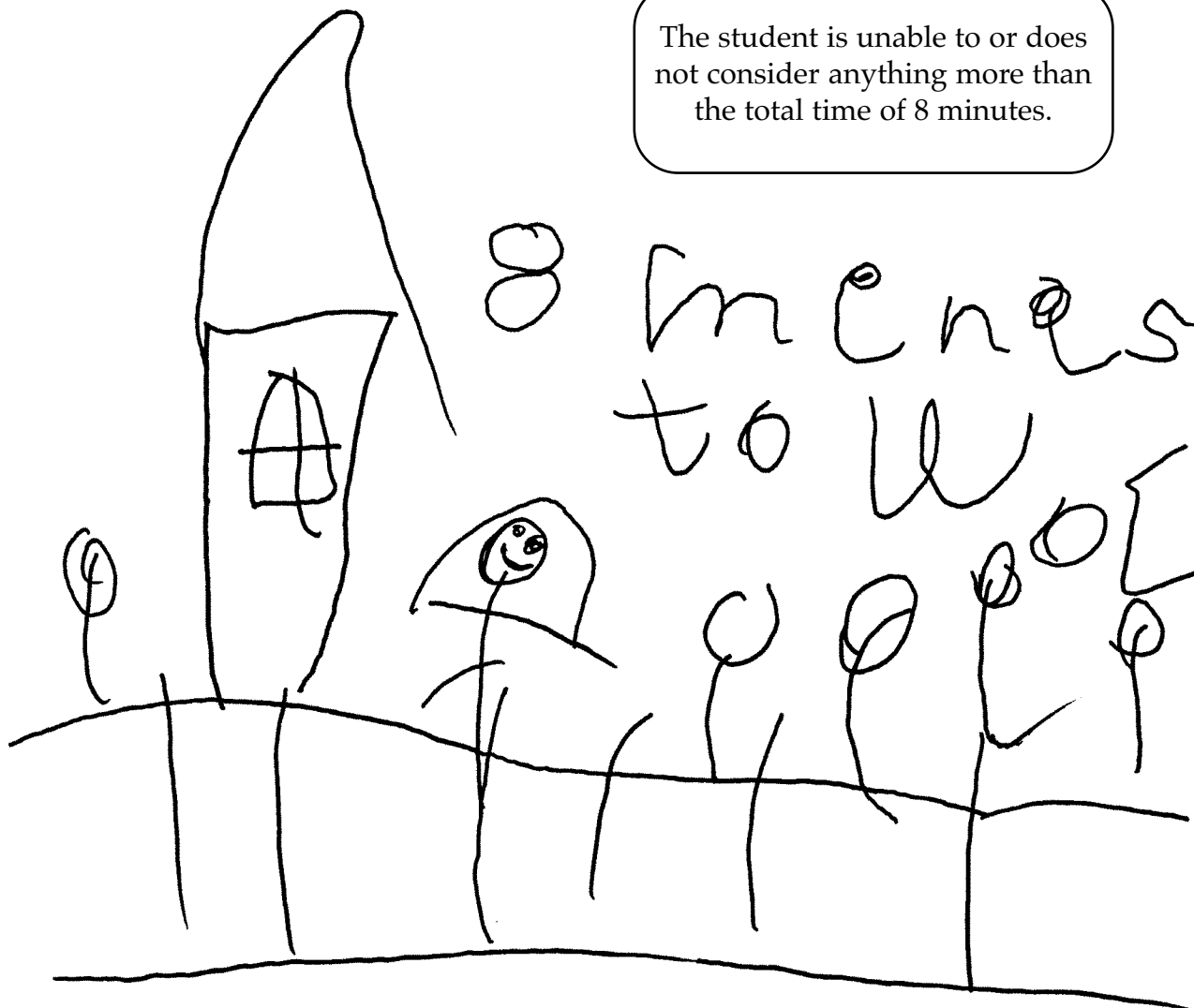
This task was written by **Deb Armitage**, Pre K-8 Mathematics Assessment Consultant at the Vermont Department of Education. The task was piloted by teachers and students in Vermont.

Novice

**Breakfast with Grandmother**

It takes Kathy 4 minutes to walk from her house to her Grandmother's house and 4 minutes to walk home. Kathy walked to her Grandmother's house every morning for two weeks to have breakfast with her and then she walked home. How many minutes did Kathy spend walking?

The student is unable to or does not consider anything more than the total time of 8 minutes.



Apprentice

Some parts are clear and correct.

Breakfast with Grandmother

It takes Kathy 4 minutes to walk from her house to her Grandmother's house and 4 minutes to walk home. Kathy walked to her Grandmother's house every morning for two weeks to have breakfast with her and then she walked home. How many minutes did Kathy spend walking?

$$7 \times 2 = 14 \text{ days}$$

1 hour and

12 min

The student does not achieve a correct answer.  
The student mislabels 1 hour and 12 minutes as 1.12 minutes.

It is unclear how the student arrived at 1 hour and 12 minutes, nor how the student got  $50+50+12$ .

$$50 + 50 + 12 = 1.12 \text{ min.}$$

Practitioner

Breakfast with Grandmother

It takes Kathy 4 minutes to walk from her house to her Grandmother's house and 4 minutes to walk home. Kathy walked to her Grandmother's house every morning for two weeks to have breakfast with her and then she walked home. How many minutes did Kathy spend walking?

walk to grams house

Walk home from Gramas house

One week

Two week

56 min

One week

two week

56 min

A correct answer is achieved.  
All work is shown and labeled.

$56 + 56 = 112$

Expert

**Breakfast with Grandmother**

It takes Kathy 4 minutes to walk from her house to her Grandmother's house and 4 minutes to walk home. Kathy walked to her Grandmother's house every morning for two weeks to have breakfast with her and then she walked home. How many minutes did Kathy spend walking?

$$\begin{array}{r} 4 \\ +4 \\ \hline 8 \text{ mins} \end{array}$$

All work is shown. A correct answer is achieved. An accurate and appropriate math representation is created.

Day	mins
1	8
2	16
3	24
4	32
5	40
6	48
7	56
8	64
9	72
10	80
11	88
12	96
13	104
14	112

14 Days

The student extends the solution and makes a mathematically relevant observation.

"if she went 1 more day it would be 2 hours" PA