

Springtime Nests

It is spring and the birds have been very busy building nests for their eggs. Maria saw 7 birds. Each bird had 1 nest with 2 eggs in each. How many eggs did Maria see? If all of the eggs hatch, how many birds will there be in all?

Springtime Nests

Suggested Grade Span

Pre K–2

Grade(s) in Which Task was Piloted

Grades K and 1

Task

It is spring and the birds have been very busy building nests for their eggs. Maria saw 7 birds. Each bird had 1 nest with 2 eggs in each. How many eggs did Maria see? If all of the eggs hatch, how many birds will there be in all?

Alternative Versions of Task

More Accessible Version:

It is spring and the birds have been very busy building nests for their eggs. Maria saw 7 birds. Each bird had 1 nest with 2 eggs in it. How many eggs did Maria see?

More Challenging Version:

The original version, and...

Later that year, each of the hatched birds builds their own nest and lays 2 eggs in each. When the eggs hatch, how many birds will there now be in all?

NCTM Content Standards and Evidence

Number and Operation Standard for Grades Pre K–2

Instructional programs from pre–kindergarten through grade 12 should enable all students to —

- 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 use repeated addition or subtraction to determine the number of birds.

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

This is a short to medium length task.

Links

This task would link well to science units about birds and wildlife.

Common Strategies Used to Solve This Task

Most students started by drawing seven birds nests and putting two eggs in each nest. They then counted all the eggs and added the seven birds to the total.

Possible Solutions*Original Version:*

$$7 \text{ birds} \times 2 \text{ eggs} = 14 \text{ eggs}$$

$$14 \text{ chicks} + 7 \text{ original birds} = 21 \text{ birds}$$

More Accessible Version:

$$7 \text{ birds} \times 2 \text{ eggs} = 14 \text{ eggs}$$

More Challenging Version:

$$14 \text{ chicks} \times 2 \text{ eggs each} = 28 \text{ new chicks} + 21 \text{ others} = 49 \text{ birds in all}$$

Task Specific Assessment Notes**General Notes**

No specific skills are necessary to engage in this task.

Novice

The Novice will choose a strategy that will not lead to a solution. No justification for reasoning will be present. Little or no communication of an approach is evident.

Apprentice

The Apprentice will achieve a partially correct solution or choose a correct strategy for only solving part of the task. There is evidence of some correct reasoning or justification for reasoning is present. An attempt is made to construct mathematical representations.

Practitioner

The Practitioner will achieve a correct solution with evidence of planning or monitoring a strategy. A sense of audience is present and appropriate and accurate mathematical representation is constructed.

Expert

The Expert has all that a Practitioner has and alternative strategies are tried and there is evidence of verifying the solutions. The Expert will extend the solution to other cases. Abstract representations are constructed to lead to a correct solution.

Novice

No awareness of audience or purpose is communicated.

The strategy will not lead to a correct solution.

No justification of reasoning is present.



The student does not put two eggs in each nest.

"I made the nests. I put eggs in."
Can you count the eggs?
(Student counted from one to 12 correctly.)
Did you put two eggs in each nest?
(Student looked and said "Yes.")
(Student did not attempt second part. Just said, "Lots of birds.")
- Scribed by teacher

The student cannot engage in the second part of the task.

Apprentice

Representation is not labeled.

"Fourteen eggs are in nests. She will see 14 baby birds."
What if we add the Mommy birds too?
"That is 15 birds."
- Scribed by teacher



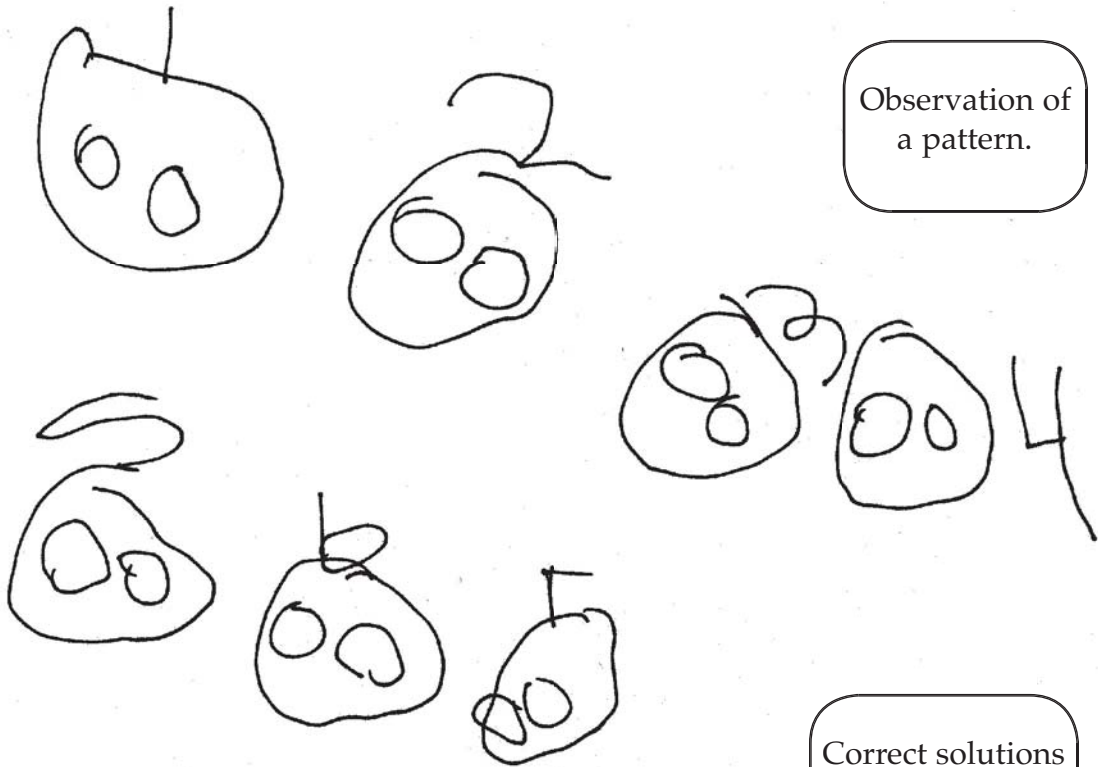
Correct strategy for finding number of eggs but not total birds.

Practitioner

"This is my diagram."
"This is a pattern – two in each."
– Scribed by teacher

Planning a strategy
is evident.

"I made nests. I put two
eggs in a nest. I added up
the eggs. This was fun!"
– Scribed by teacher



Observation of
a pattern.

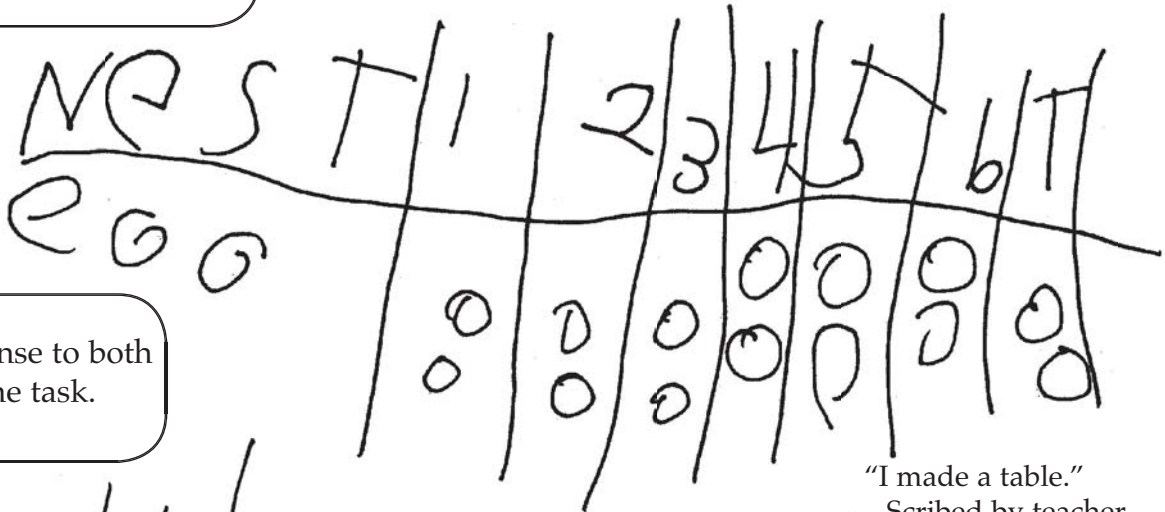
Correct solutions
are achieved.

"She sees 21 birds. You have to
count the baby and Mommy birds
by twos and ones."
– Scribed by teacher

"They got 14 eggs. That is
14 baby birds."
– Scribed by teacher

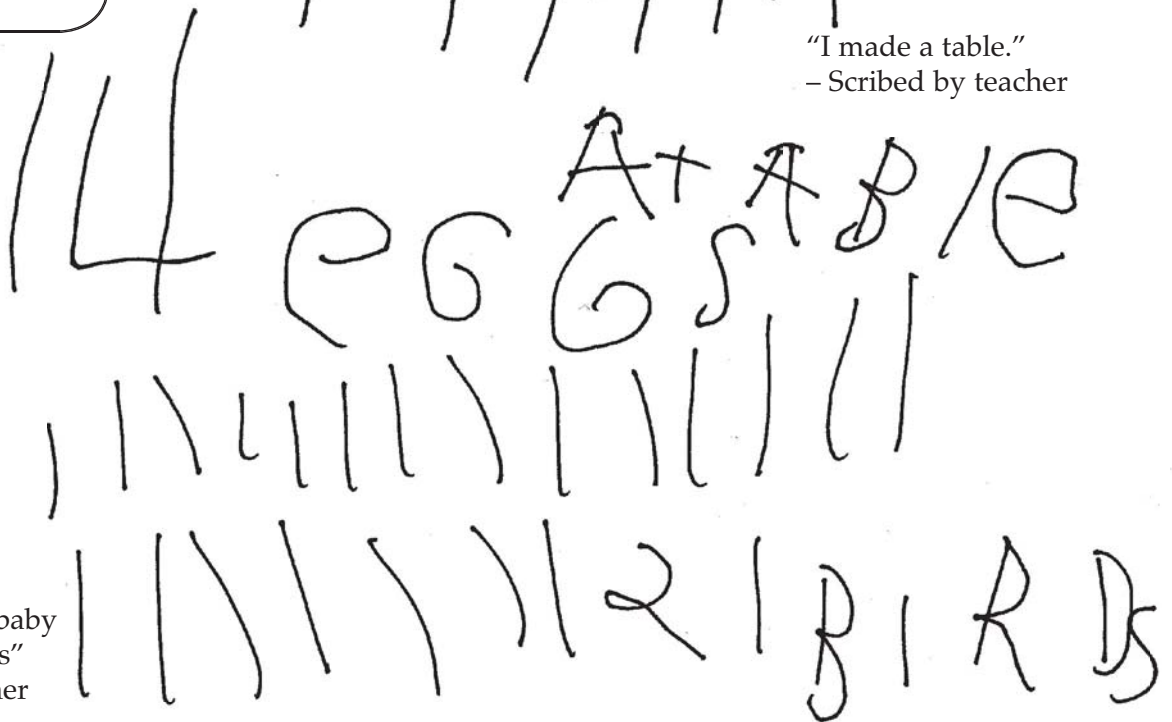
Expert

Made an observation of a pattern.



Correct response to both parts of the task.

"I made a table."
- Scribed by teacher



"I made lines for baby and Mommy birds"
- Scribed by teacher

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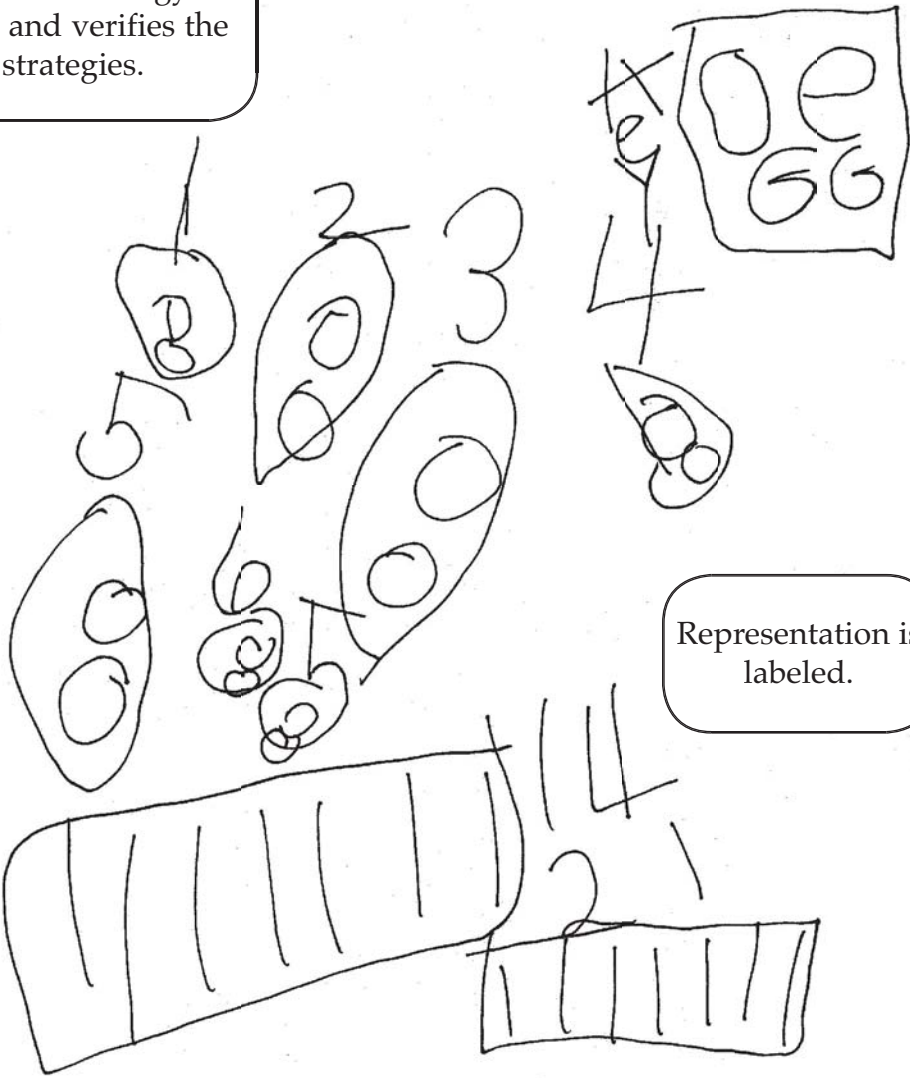
The beginning of a more abstract representation.

"(The pattern) is counting by twos,
2, 4, 6, 8, 10, 12, 14."
- Scribed by teacher

"This is my diagram."
- Scribed by teacher

Expert cont.

An alternative strategy is attempted and verifies the two strategies.



Representation is labeled.

Extended the solution to include Daddy birds. Representation is labeled.

"These are the Mommy birds. When they hatch you can count 21 birds again. Twenty-one is right so is 14. This is the same Daddy birds. That is 28 birds."
- Scribed by teacher

