SECURE MATERIAL - Reader Name: $\qquad$ Tennessee Comprehensive Assessment Program

## TCAP/CRA

## 2014



## Phase III <br> Candy Bars Task Anchor Set

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## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats: $\qquad$

Write the fraction of the candy bar that she has left: $\qquad$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats: $\qquad$

Write the fraction of the candy bar that she has left: $\qquad$
c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\qquad$

Write the fraction of the candy bar that he has left: $\qquad$
d. Use the > or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


## Scoring Guide

## The CCSS for Mathematical Content ( 2 points)

3.NF.A. 1 Writes correct fractions to represent the amount of candy bar eaten and the amount left in parts $a, b$, and $c$.
(1 Point)
3.NF.A.3d Compares two fractions with the same numerator and records the result using the < or > symbol. Student may show this by:

- stating $\frac{1}{4}<\frac{1}{3}$ or $\frac{1}{3}>\frac{1}{4}$; or
- stating any accurate comparison of fractions with the same numerator, even if the fractions do not represent the amount of candy bar eaten.
(1 Point)


## The CCSS for Mathematical Practice (3 points)

MP3 Constructs a viable argument to explain the comparison of fractions in part d using numerators and denominators. Students may show this by:

- stating that the denominators are not equal and the fraction with the smaller denominator has fewer pieces, which are larger; and since each fraction has the same number of pieces in the numerator, the one with the larger pieces is the larger fraction;
- stating that both fractions have 1 as the numerator, and the fraction with 3 as the denominator has fewer pieces that are larger than the fraction with 4 as the denominator, so 1 larger piece is greater than 1 smaller piece;
- stating that the top numbers are the same and the bottom numbers are different, and the one with the smaller bottom number has larger pieces, so it is the larger fraction; or
- creating fractions with common denominators for $\frac{1}{3}$ and $\frac{1}{4}$, and then stating that the fraction with the larger numerator is the larger fraction. (1 Point)
(MP3: Construct viable argument and critiques the reasoning of others.)
MP4 Creates diagrams showing candy bars partitioned accurately based on either the amounts eaten and left (as given in the task), or the fractions written by the student, if different from the fractions given in the task.
(1 Point)
(MP4: Model with mathematics.)
MP6 Uses precise mathematical language in the explanation by accurately referencing and using thirds, fourths, numerator, denominator, and greater than or less than.
(1 Point)
(MP6: Attend to precision.)


## The CCSS for Mathematical Content Addressed In This Task

## Develop understanding of fractions as numbers.

3.NF.A. 1 Understand a fraction $1 / b$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts; understand a fraction $a / b$ as the quantity formed by a parts of size $1 / b$.

Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
3.NF.A.3d $\quad$ Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

## The CCSS for Mathematical Practice*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

* Gray type indicates Mathematical Practices not addressed in this assessment.


## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats: $\qquad$
Write the fraction of the candy bar that she has left: $\qquad$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats:


Write the fraction of the candy bar that she has left:


Candy Bars Task
c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.

d. Use the $>$ or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


Anchor 1
Total Content Points: 2
Total Practice Points: 3 (MP3, MP4, MP6)

In Parts A, B, and C, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\frac{2}{3}, \frac{1}{4}$ and $\left.\frac{3}{4}\right)$ (3.NF.A.1). The student also creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left (MP4). In Part D, the student accurately compares two fractions with the same numerator using the < symbol $\left(\frac{1}{4}<\frac{1}{3}\right)$ (3.NF.A.3d). The student also provides a viable argument to explain the comparison of fractions using numerators and denominators ("the bigger the denominator is the smaller the Pieces, And the numerators are the same") (MP3). The student uses precise mathematical language in the explanation by accurately referencing numerator and denominator (MP6).

Total Awarded Points: 5 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

## Candy Bar

a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.

[Write the fraction of the candy bar that Sophia eats, $]$ $\qquad$
[Write the fraction of the candy bar that she has left: $\frac{1}{2}$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.

[Write the fraction of the candy bar that Maxine eats: $\frac{\frac{1}{3}}{}$
Write the fraction of the candy bar that she has left: $\frac{2}{3}$ to Key


Candy Bars Task
c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\qquad$
Write the fraction of the candy bar that he has left: $\qquad$ $\frac{3}{4}$
d. Use the > or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy barthatuavideats Use what you know about numerators and denominators to explain the comparison:


Anchor 2
Total Content Points: 2
Total Practice Points: 3 (MP3, MP4, MP6)

In Parts A, B, and C, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\frac{2}{3}, \frac{1}{4}$ and $\left.\frac{3}{4}\right)$ (3.NF.A.1). The student also creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left (MP4). In Part D, the student accurately compares two fractions with the same numerator using the $>$ symbol $\left(\frac{1}{3}>\frac{1}{4}\right)$ (3.NF.A.3d). The student provides a viable argument to explain the comparison of fractions using numerators and denominators ("whatever denomanator is bigger its Less but only if the numeator are the same") (MP3). The student uses precise mathematical language in the explanation by accurately referencing numerator and denominator (MP6).

Total Awarded Points: 5 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

> Candy Bar
a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats:


Write the fraction of the candy bar that she has left: $\qquad$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats: $\qquad$

Write the fraction of the candy bar that she has left:


## Candy Bars Task

c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.

d. Use the >or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


Total Practice Points: 1 (MP4)
In Parts A, B, and C, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\frac{2}{3}, \frac{1}{4}$ and $\left.\frac{3}{4}\right)$ (3.NF.A.1). The student also creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left (MP4). In Part D, the student accurately compares two fractions with the same numerator using the < symbol $\left(\frac{1}{4}<\frac{1}{3}\right)$ (3.NF.A.3d). The student does not use numerators and denominators to explain the comparison of the fractions ("ate a bigger piece . . . he had bigger pieces") (no credit for MP3). By not referencing numerators and denominators, there is insufficient evidence of using precise mathematical language in the explanation to receive credit (no credit for MP6).

Total Awarded Points: 3 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

## Candy Bar

a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats: $\qquad$

Write the fraction of the candy bar that she has left: $\qquad$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats: $\qquad$
Write the fraction of the candy bar that she has left: $\qquad$

## Candy Bars Task

c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\qquad$
Write the fraction of the candy bar that he has left: $\frac{3}{4}$
d. Use the $>$ or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


Anchor 4
Total Content Points: 2
Total Practice Points: 1
(MP4)
In Parts A, B, and C, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\frac{2}{3}, \frac{1}{4}$ and $\left.\frac{3}{4}\right)$ (3.NF.A.1). The student also creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left (MP4). In Part D, even though the fraction given does not actually represent the amount of candy eaten by Maxine, the student accurately compares two fractions with the same numerator using the $>$ symbol $\left(\frac{1}{2}>\frac{1}{4}\right)$ (3.NF.A.3d). The student supports the answer by using crossmultiplication, but does not use the relationships between numerators and denominators to explain the comparison of fractions (no credit for MP3). By not referencing numerators and denominators, the student does not provide sufficient evidence of using precise mathematical language in the explanation to receive credit (no credit for MP6).

Total Awarded Points: 3 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats: $\qquad$
Write the fraction of the candy bar that she has left: $\frac{{ }^{\prime}}{-2}$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats:


Write the fraction of the candy bar that she has left: $\qquad$

## Candy Bars Task

c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.

Write the fraction of the candy bar that David eats: $\qquad$

Write the fraction of the candy bar that he has left:

d. Use the > or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


Total Practice Points: 1 (MP4)
In Parts A, B, and C, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\frac{2}{3}, \frac{1}{4}$ and $\left.\frac{3}{4}\right)$ (3.NF.A.1). The student also creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left. In Part A, the extraneous lines were judged to be erasure marks (MP4). The student accurately compares two fractions with the same numerator using the $>$ symbol in Part $D\left(\frac{1}{3}>\frac{1}{4}\right)$ (3.NF.A.3d). However, the explanation provided ("The less the denomontor the more you have") does not mention that the numerators must be the same (no credit for MP3). The student also does not use precise mathematical language, since it is unclear whether size or number of pieces is meant by "the more you have" (no credit for MP6).

Total Awarded Points: 3 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

Candy Bar
a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats: $\frac{1}{2}$

Write the fraction of the candy bar that she has left: $\frac{-1}{2}$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats: $\qquad$

Write the fraction of the candy bar that she has left: $\qquad$ $\frac{2}{3}$

## Candy Bars Task

c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\frac{1}{4}$
Write the fraction of the candy bar that he has left: $\frac{3}{4}$
d. Use the > or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.



Total Content Points: 1
(3.NF.A.1)

Total Practice Points: 1 (MP4)
In Parts A, B, and C, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\frac{2}{3}, \frac{1}{4}$ and $\left.\frac{3}{4}\right)$ (3.NF.A.1). The student also creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left. In Part C, the extraneous lines were judged to be erasure marks (MP4). In Part D, even though neither of the fractions given represents the amount of candy eaten by Maxine, the inequality is correct.
However, the student does not compare two fractions that have the same numerator $\left(\frac{1}{4}<\frac{3}{4}\right)$
(no credit for 3.NF.A.3d). In Part D, the student restates the inequality in words, but does not reference numerators and denominators to explain the comparison of the fractions (no credit for MP3). Without using numerators and denominators to explain the comparison, the student does not provide sufficient evidence of precise mathematical language for credit (no credit for MP6).

Total Awarded Points: 2 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

Candy Bar
a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats: $\qquad$
Write the fraction of the candy bar that she has left: $1 / 2$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats: $\qquad$
Write the fraction of the candy bar that she has left: $2 / 3$

## Candy Bars Task

c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\qquad$
Write the fraction of the candy bar that he has left: $3 / 4$
d. Use the $>$ or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


Total Content Points: 1 (3.NF.A.1)
Total Practice Points: 1 (MP4)
In Parts A, B, and C, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\frac{2}{3}, \frac{1}{4}$ and $\left.\frac{3}{4}\right)$ (3.NF.A.1). The student also creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left (MP4). In Part D, the student indicates that Maxine eats more, but does not compare the fractions using the < or > symbol (no credit for 3.NF.A.3d). The student does not use numerators and denominators to explain the comparison of the fractions ("her bar is divided into less pices") (no credit for MP3). Without referencing numerator and denominator, the student does not use precise mathematical language in Part D (no credit for MP6).

Total Awarded Points: 2 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

Candy Bar.
a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats:


Write the fraction of the candy bar that she has left:

b. Maxine eats 1 piece and has 2 pieces leff.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats:


$$
3
$$

## Candy Bars Task

c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\frac{1}{4}$
$\therefore$
Write the fraction of the candy bar that he has left: $\qquad$ C
d. Use the > or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


Anchor $8 \quad$ Litho 00353200173
Total Content Points: 1 (3.NF.A.3d)
Total Practice Points: 1 (MP4)
In Part A, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\left.\frac{1}{2}\right)$. In Parts B and C, the student writes correct amounts eaten $\left(\frac{1}{3}, \frac{1}{4}\right)$, but incorrectly states the amounts left $\left(\frac{1}{3}, \frac{1}{4}\right)$ (no credit for 3.NF.A.1). However, the student does create diagrams showing accurately partitioned candy bars based on the amounts eaten and left (MP4). In Part D, the student accurately compares two fractions with the same numerator using the < symbol $\left(\frac{1}{4}<\frac{1}{3}\right)$ (3.NF.A.3d). The student then explains the comparison by using crossmultiplication instead of by using the relationships between numerators and denominators (no credit for MP3). In Part D, by not referencing numerators and denominators in the explanation, the student does not provide sufficient evidence of precise mathematical language for credit (no credit for MP6).

Total Awarded Points: 2 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of equal pieces.

a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that Sophia eats: $\qquad$
Write the fraction of the candy bar that she has left: $\frac{11}{2}$
b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that Maxine eats: $\qquad$
Write the fraction of the candy bar that she has left: $1 \frac{1}{5}$

## Candy Bars Task

c. David eats 1 piece and has 3 pieces left.

Show how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\qquad$
Write the fraction of the candy bar that he has left: $\qquad$ $2 \frac{1}{3}$
d. Use the $>$ or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.

Anchor 9 Litho 00083200170

Total Content Points: 0 (3.NF.A.3d)
Total Practice Points: 1 (MP4)
In Parts A, B, and C, the student writes incorrect fractions to represent all the amounts of candy bar eaten and all the amounts left (no credit for 3.NF.A.1). However, the student does create diagrams showing accurately partitioned candy bars based on the amounts eaten and left as given in the task. In Part A, the student diagrams the candy bar above the written task, which is acceptable (MP4). In Part D, the student does not compare two fractions using the < or > symbol (no credit for 3.NF.A.3d). The student also does not use numerators and denominators to explain the comparison of fractions (no credit for MP3). In Part D, by not referencing numerators and denominators in the explanation, the student does not provide sufficient evidence of precise mathematical language to receive credit (no credit for MP6).

Total Awarded Points: 1 out of 5

## Candy Bars Task

Sophia, Maxine, and David each have their own candy bar. Their candy bars are all the same size. They each divide their own candy bar into a different number of équal pieces.

## Candy Bar.

a. Sophia eats 1 piece and has 1 piece left.

Show how Sophia's candy bar was divided.


Write the fraction of the candy bar that she has left:

b. Maxine eats 1 piece and has 2 pieces left.

Show how Maxine's candy bar was divided.


Write the fraction of the candy bar that she has left: $\frac{2}{13}$

Candy Bars Task
c. David eats 1 piece and has 3 pieces left.

Shöw how David's candy bar was divided.


Write the fraction of the candy bar that David eats: $\square$ 1 Write the fraction of the candy bar that he has left:

d. Use the > or < sign to compare the fraction of candy bar that Maxine eats to the fraction of candy bar that David eats. Use what you know about numerators and denominators to explain the comparison.


They are $=$ because they both $=$ 0.5 .

## Total Content Points: 0

Total Practice Points: 0
In Parts A and B, the student writes correct fractions to represent the amount of candy bar eaten and the amount left $\left(\frac{1}{2}\right.$ and $\frac{1}{2}, \frac{1}{3}$ and $\left.\frac{2}{3}\right)$, but both numbers given in Part C are incorrect $(1,3)$ (no credit for 3.NF.A.1.) Similarly, in Parts A and B, the student creates diagrams showing accurately partitioned candy bars based on the amounts eaten and left, but, in Part C, the diagram is incorrectly divided into thirds (no credit for MP4). In Part D, the student does not compare two fractions using the < or > symbol (no credit for 3.NF.A.3d). The student also does not use numerators and denominators to explain the comparison of the fractions (no credit
for MP3). In Part D, by not referencing numerators and denominators in the explanation, the student does not provide sufficient evidence of precise mathematical language to receive credit (no credit for MP6).

Total Awarded Points: 0 out of 5

