

Fraction Strip Game

Grade Level: 4

Objectives:

1. The student will compare and contrast physically the various size-relationship between fractions.
2. The student will demonstrate (directly and indirectly) the addition of fractions using fraction strips.

Pass Skill: Standard 2.3.b: create physical and pictorial models of equivalent and non-equivalent fractional parts to be compared, added or subtracted (eg. egg cartons, fraction strips, circles, and squares).

Material needed:

For this exercise, you will need the following per each pair of students:

Two strips from Templates A, B, C, D, and E.

Two standard legal size envelopes or two sandwich baggies

Two pairs of scissors.

One six-sided die labeled: $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, skip , roll again.

Instructional Process:

1. Pass out a strip of each size to each student in the classroom.
2. Instruct the students on the correct labeling of each part of each strip.
3. Provide time for the students to trim his/her strips and discard the paper scraps.
4. Instruct the students to then cut each strip into equal parts by cutting along the vertical lines within each strip.

Demonstrate the game:

1. The first student will roll the die and place the corresponding fraction strip of paper on top of his/her whole strip of paper. Pass the die.
2. The second student will roll the die and place the corresponding fraction strip of paper on top of his/her whole strip of paper. Pass the die.
3. This process will continue between players until one of them manages to cover the whole strip with fractional strips.
4. There can be no overlapping of fractional pieces.
5. There can be no trading for a different fractional piece.
6. If a roll results in a fraction strip size that will not work, the die is passed to the opponent.
7. This will continue until someone has successfully covered his/her whole strip according to these rules. He/she is the winner.

The number of times the students play is determined by the teacher. As the teacher moves about the room observing the students in action, a visual assessment of their performance will determine if the students are playing according to the rules.

Closure: Conduct a discussion of what the students observed following participation in several rounds of the game. Ask questions such as, “Which fraction is bigger?” “Were you surprised that one-sixteenth was smaller than one-fourth?”

Assessment: An oral assessment such as asking, “How many one-sixteenths will it take to cover one-fourth of the strip?”, may be used to observe what the students are discovering about the “size” of one fraction as compared to another.

Modifications/Accommodations: In place of the whole strip representing one as it is on Template A, one could use the strip on Template E. By doing this, the student would more easily “see” the “size” needed to fill the whole strip while playing the game. Additionally, the recognition of relationships such as how many one-sixteenths make up one-fourth, etc should develop.

TEMPLATES

Template A is of strips that are whole and represent the value 1. Label it in the middle with the number 1.

Template B is of strips divided into halves. Label each half $\frac{1}{2}$, then cut them apart.

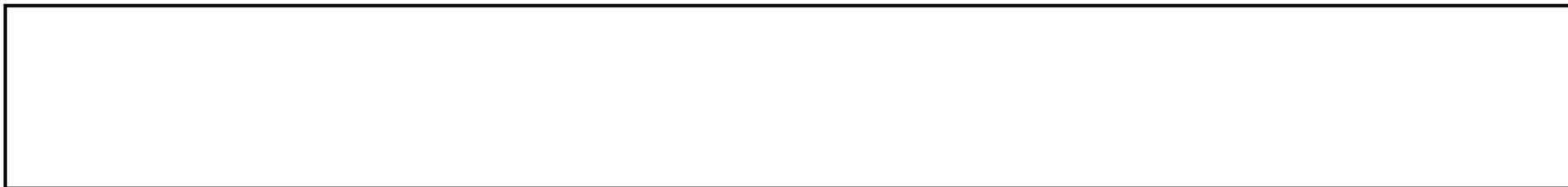
Template C is of strips divided into fourths. Label each fourth $\frac{1}{4}$, then cut them apart.

Template D is of strips divided into eighths. Label each eighth $\frac{1}{8}$, then cut them apart.

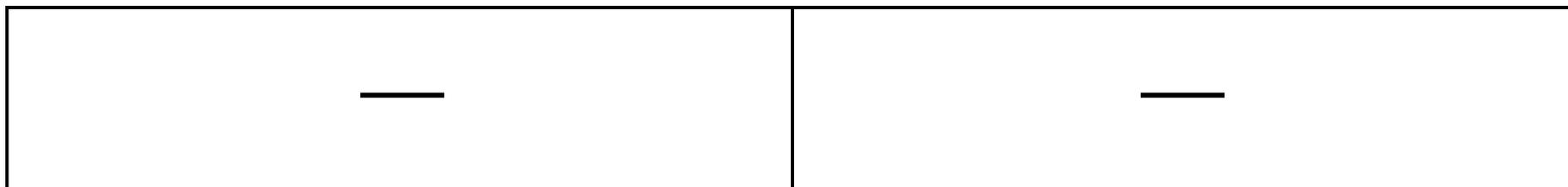
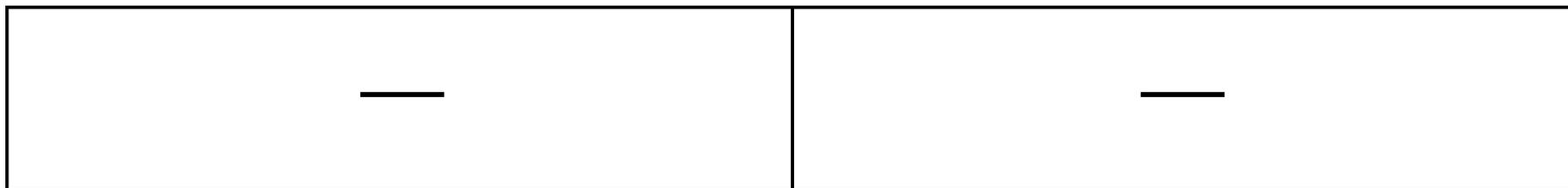
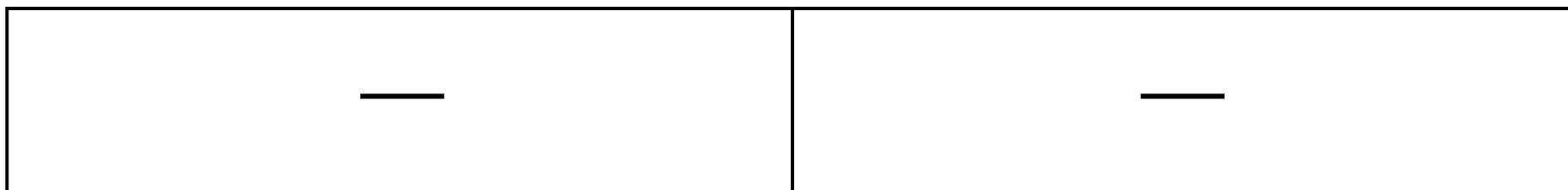
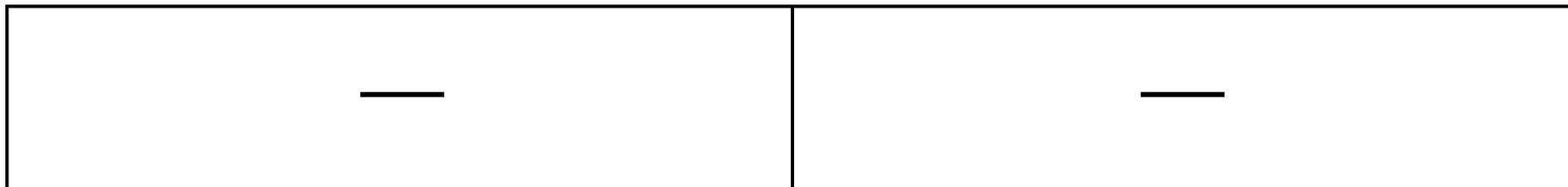
Template E is of strips divided into sixteenths. Label each sixteenth $\frac{1}{16}$, then cut them apart.

Each of the following templates should be made from a different color of standard 8 ½ “ x 11” paper.

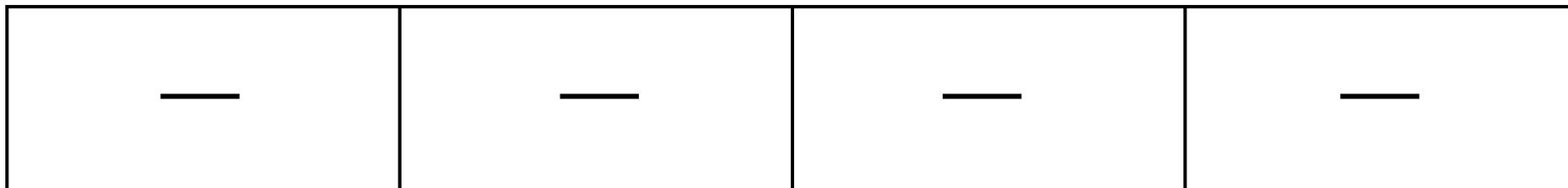
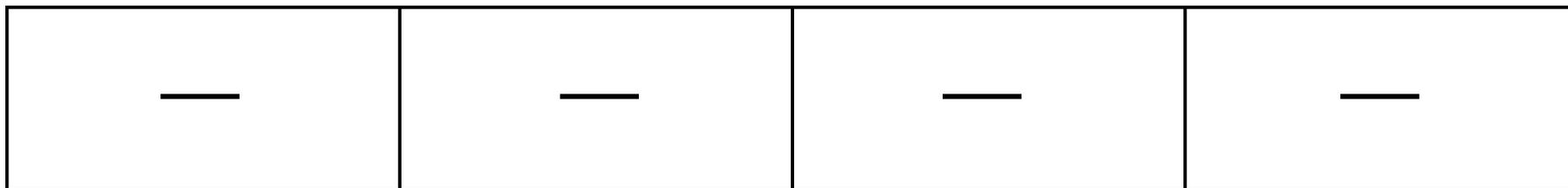
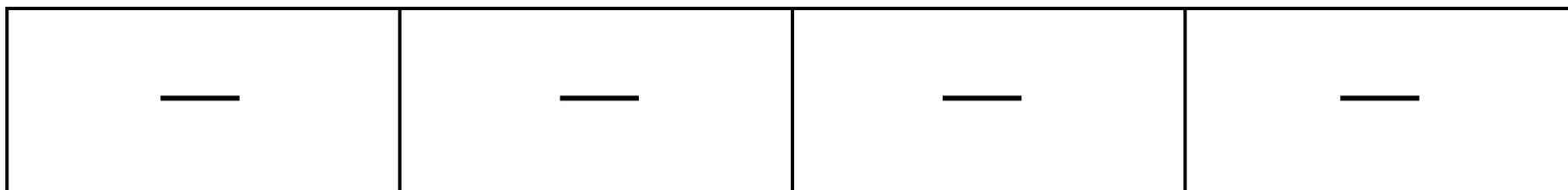
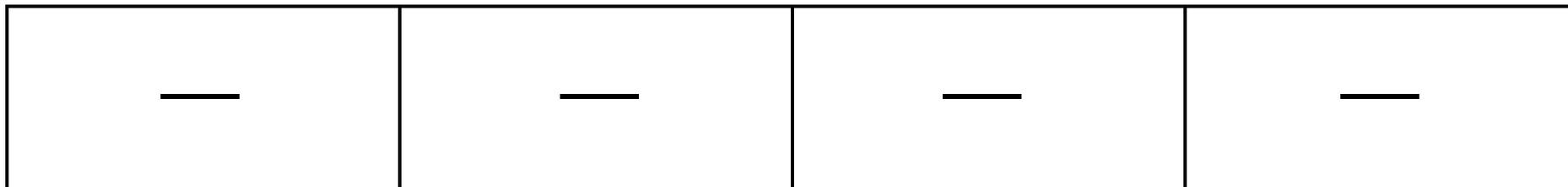
Template A is of strips that are whole and represent the value 1. Label it in the middle with the number 1.



Template B is of strips divided into halves. Label each half, $\frac{1}{2}$, then cut them apart.



Template C is of strips divided into fourths. Label each fourth, $\frac{1}{4}$, then cut them apart.



Template D is of strips divided into eighths. Label each eighth, $\frac{1}{8}$, then cut them apart.

