

## NJSLA Grade 4 Mathematics

### Lesson 7: Selected-Response

#### Sort by Category

#### Rationale

- There are a variety of mathematical models, methods and strategies that students can employ to respond to mathematical items. Many students employ a combination of strategies. During this lesson, students will share and employ strategies, and begin considering how they can most efficiently respond to assessment questions.
- Students need to explore using different strategies for each style of item they will encounter on the NJSLA. Students need to practice selected-response problems in which items are sorted into given categories.

#### Goals

- To provide the opportunity to complete selected-response items. Students will identify which strategies are the most efficient with category sort selected-response items.
- To complete a manipulative and pencil/paper version of technology enhanced items
- To consider response choices and their given categories, specific to Grade 4 content.

#### Content Standard

- **4.NF.2.** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as  $\frac{1}{2}$ . Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model.

#### Objectives

- Students will practice a variety of problem solving strategies.
- Students will identify the strategy or strategies that are the most efficient for them personally.
- Students will be exposed to items that reflect the content of CCSS and the format of NJSLA.
- Students will reflect upon the items and strategies that are the most and least difficult for him or her personally.

## **Materials**

- Sorting by Category- Less than, Equal to, or Greater than Board (copy for partners)
- Fraction cards (copy and cut)
- Check for Understanding Problems (one copy per student)
- Exit ticket (one copy per student)

## **Procedures**

- Form student pairs or small groups.
- Pass out Category Board and fraction cards.
- Have students work together and discuss whether each fraction is less than, equal to, or greater than  $\frac{1}{2}$  and then place the fraction in the appropriate space on their board.
- Once students have placed all of the fractions, review the answers as a class. Ask students to justify their choice of placement.
- Next, give each group of students a Check for Understanding problem worksheet.
- An exit ticket has been provided and may be used for a formative assessment.

## **Teacher & Teachers' Aide Observations During the Group Work**

- Be sure to circulate the classroom and monitor students while they are sorting by category. Try to observe the following and note the information:
- Are students creating viable arguments for their choices?
- Are students using visual fraction models as a solution strategy?
- Which students are spending too much time on one particular item? One particular denominator?
- Which fractions were the most challenging? The least challenging?

## **Check for Understanding**

- Have students reflect upon this experience by generating a class discussion of responses and modeling used.
- Provide the Exit Slip constructed-response to be completed independently. Check for student understanding of vocabulary and proper use of symbols. This exit ticket can serve as a formative assessment.

## **Follow up**

- Sorting by category is a skill that needs to be reinforced throughout the year across the domains. The sort by category board activity provided can be used as a template for different content areas in grade 4.

## **Technology Enhanced NJSLA Items**

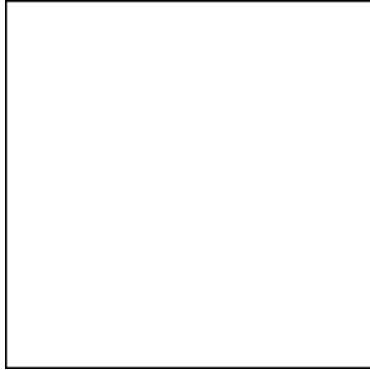
- Sort by category style items will appear on the NJSLA assessments. On the computer, the items will be dragged to the chosen categories. It is possible for items to belong to more than one category; it is also possible that some items may not fit in any category and remain unselected. **Following the directions for each problem is very important.**
- When practicing sort by category items simulated on paper/pencil, the student can easily copy the items under the category headings.

Name:

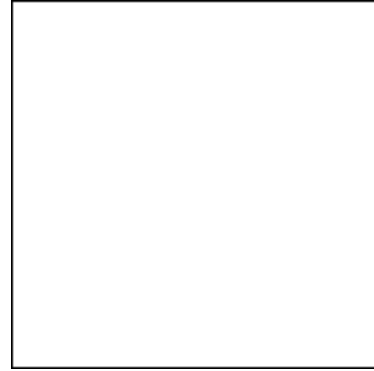
Date:

Create two fractions with different denominators by partitioning the rectangles and shading in the sections.

## Exit Ticket



Write the fraction \_\_\_\_\_



Write the fraction \_\_\_\_\_

Compare the two fractions. Create a comparison statement using less than, equal to, or greater than symbols. Justify your response in written form. (words, numbers and symbols can be used).

Comparison Statement:

Justification:

# Grade 4 Lesson 7 Fraction Cards



$\frac{1}{3}$	$\frac{2}{3}$	$\frac{1}{5}$	$\frac{2}{5}$	$\frac{3}{5}$
$\frac{4}{5}$	$\frac{1}{6}$	$\frac{5}{6}$	$\frac{1}{8}$	$\frac{3}{8}$
$\frac{5}{8}$	$\frac{7}{8}$	$\frac{3}{6}$	$\frac{2}{4}$	$\frac{4}{8}$

# Less than, Equal to, or Greater than $\frac{1}{2}$

Less than ( $<$ ) $\frac{1}{2}$	Equal to ( $=$ ) $\frac{1}{2}$	Greater than ( $>$ ) $\frac{1}{2}$

Name \_\_\_\_\_ Date \_\_\_\_\_

Sort the fractions into the appropriate category.

1.



Less than $\frac{1}{2}$	Equal to $\frac{1}{2}$	Greater than $\frac{1}{2}$

2.



Less than $\frac{2}{3}$	Equal to $\frac{2}{3}$	Greater than $\frac{2}{3}$

3.



Less than $\frac{5}{6}$	Equal to $\frac{5}{6}$	Greater than $\frac{5}{6}$

4.



Less than $\frac{2}{5}$	Equal to $\frac{2}{5}$	Greater than $\frac{2}{5}$

## Answer Key

1.

Less than $\frac{1}{2}$	Equal to $\frac{1}{2}$	Greater than $\frac{1}{2}$
$\frac{1}{6}$	$\frac{2}{4}$	$\frac{5}{8}$ $\frac{2}{3}$

2.

Less than $\frac{2}{3}$	Equal to $\frac{2}{3}$	Greater than $\frac{2}{3}$
$\frac{1}{3}$	$\frac{4}{6}$	$\frac{8}{10}$ $\frac{7}{8}$

3.

Less than $\frac{5}{6}$	Equal to $\frac{5}{6}$	Greater than $\frac{5}{6}$
$\frac{1}{3}$ $\frac{2}{3}$	$\frac{10}{12}$	$\frac{9}{10}$

4.

Less than $\frac{2}{5}$	Equal to $\frac{2}{5}$	Greater than $\frac{2}{5}$
$\frac{1}{8}$	$\frac{40}{100}$ $\frac{4}{10}$	$\frac{1}{2}$