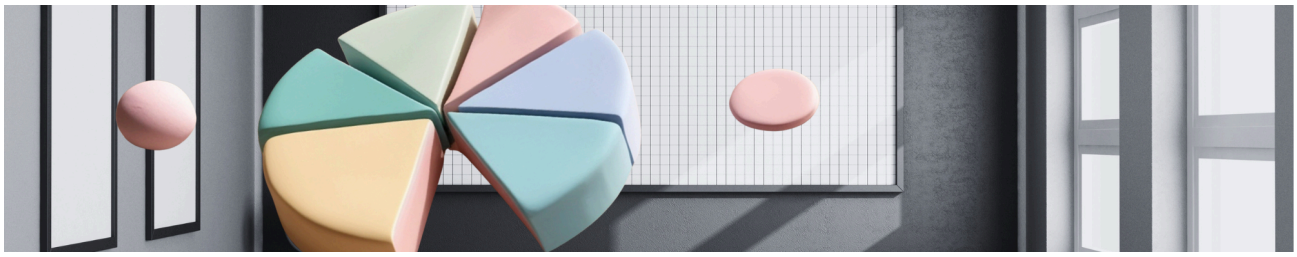
THE WHOLENESS GROUP
Grade Band: 4-5
Content Focus: Theatre & Math



LEARNING DESCRIPTION

In this lesson, students will be assigned a role as a fraction, and then interact with peers as their fraction through a variety of drama activities and strategies. They will use questioning to discover their identities, engage in a simple group improvisation to explore the relationships among fractions, and then write about the experience from their fraction-character's point of view.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can characterization and improvisation be used to explore fractions?	I can assume the role of a fraction and interact with other fractions to explore math concepts.

GEORGIA STANDARDS

Curriculum Standards	Arts Standards
Grade 4: 4.NR.4.3 Compare two fractions with different numerators and/or different denominators by	**Grade 4:** TA4.PR.1 Act by communicating and sustaining roles in formal and informal environments.

flexibly using a variety of tools and strategies and recognize that comparisons are valid only when the two fractions refer to the same whole. **Grade 5:** 5.NR.3.3 Model and solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators.	**Grade 5:** TA5.PR.1 Act by communicating and sustaining roles in formal and informal environments.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
Grade 4: 4.NR.2.3 Generate equivalent fractions, including fractions greater than 1, using multiple representations. Limit fractions to denominators of 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, 50, and 100. **Grade 5:** 5.NR.2.1 Compare fractions and mixed numbers with like and unlike denominators of 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, and 100 using equivalence to create a common denominator. Use the symbols for is less than (<), is more than (>), or is equal to (=) to record the comparison.	**Anchor Standard 3:** I can act in improvised scenes and written scripts. **Anchor Standard 8:** I can relate theatre to other content areas, arts disciplines, and careers.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
• Fraction - A number that represents a part of a whole, or a number of equal parts of a whole; it consists of a numerator and a denominator. • Numerator - The top number in a fraction, showing the number of parts of the whole • Denominator – The bottom number of a fraction, showing the number of parts that the whole is divided into • Greater than – Having a higher numerical value than, indicated by the sign >	• Character – An actor or actress in a specified role • Improvisation – A moment in a play that is not rehearsed or “scripted”, or acting without a script. For example: if an actor forgets a line, he/ she may improvise the line in the scene. Improvisation is also a style of theatre that lends itself to comedy that is created “in the moment”

• Less than – Having a lower numerical value than, indicated by the sign < • Equivalent – Having the same numerical value • Common Denominator – A shared multiple of denominators of different fractions • Simplest form – The equivalent fraction having the smallest possible values for the numerator and denominator • Proper fraction - A fraction that is less than one, with the numerator less than the denominator • Unit fraction – A fraction with a numerator of 1	

MATERIALS

- Set of clip-on name tags with proper fractions that have denominators of 12 or less (e.g., 2/6, 3/8, 7/12, 4/9, etc.). The collection need not be curated with a goal of one-to-one correspondence; some randomness is fine. It can include some equivalent fractions.
- A container (can, box, bag) to hold the tags
- Wholeness Group Journal Sheet – create a worksheet with a space for "Character Name," a space for "Nicknames," and a 'journal' area beginning "Today I went to a Wholeness Group, and here's what happened . . . " with ample blank lines.
- Index cards and writing utensils

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

PROMPTED MOVEMENT

- Teach poses to go with vocabulary prompts:
  - Numerator – Stand, or go up on toes
  - Denominator – Sit, duck or squat
  - Greater than – arms angled to right
  - Less than – arms angled to left
  - Equivalent – parallel horizontal arms
  - Unit fraction – single finger up, above a horizontal arm
- Call out prompts randomly for students to respond to with the prescribed poses.
  - Possibly: Once the activity is established, draft volunteers to call out the prompts.

Work Session

"WHO AM I?"

- Tell students that they will become fraction characters.
- Have each student pick a name tag from the container of tags, or give each student a name tag. Instruct them to keep the tags to themselves, and not to let others see the fraction they are holding.
- Have each student pin the tag they are holding on the back of another student. The tag becomes the second student's character. The student must see the fraction on the tag.
- Give each student an index card and writing utensil for recording what they learn about their character.
- Model for students the process of letting another student see the tag on their back, and then asking the other student a 'yes or no' question. Instruct them to use first person pronouns in their questions. E.g., "Am I greater than ½?," "Is my numerator even?," "Is my denominator double digits?," or "Am I in my simplest (or most reduced) form?" (not "Is my fraction greater than . . ." – they <u>are</u> their fraction character). Model noting information on the card (shorthand is fine), such as "> ½," "Even num," "single-digit denom," or "simplest form".
- Have students pair up, look at each other's fraction, ask each other a yes-or-no question about their fraction identity, note the information, and then move on to another partner to repeat the process.
- When a student deduces their fraction ("Am I 4/6?") they can move the tag from their back to their front.
- Coach students as needed in the process.
- If the process becomes frustrating for some students, tell students that, rather than asking a yes-or-no question, they can ask for a hint. The other student should give a hint that does not totally reveal the answer.
- When most students have figured out their identity, stop the activity and have all students move their tag from the back to the front. The tag gives them their identity.

SOCIOMETRICS

- Sociometrics is a term from Sociology that means dividing a larger group into smaller affinity groups. In this activity, the students will divide themselves into groups according to mathematical prompts.
- Identify two areas of the room. Give a mathematical prompt, and have students move to one side of the room or the other accordingly.
    - E.g., "Go to this side of the room if your denominator is even; go to that side of the room if your denominator is odd" or "Go to this side of the room if your value is greater than one half; go to that side if your value is half or less".
    - Prompts can deal with even/odd for numerator or denominator; greater than/less than for total fraction or for numerator or denominator; number of digits in denominator; simplest form; unit fraction; difference between numerator and denominator; etc.
- As students move to one side of the room or the other, monitor for accuracy; also, students can help each other find the right place. As needed, stop and let the class observe checking everyone's placement.

MEET'N'GREET (optional)

- Give students a chance to walk around and introduce themselves to one another, tell about themselves, see what they have in common, etc. Remind them to use their vocabulary, e.g. "We have the same numerator" or "Your denominator is greater than mine" or "We are both less than one half," etc.

IMPROVISATION: THE WHOLENESS GROUP

- Hand out the "Wholeness Group" worksheet. Have students fill in their character name – their fraction identity.
- Discuss how nicknames are other names for a person (as in Chuck for Charles), and have students write nicknames for their character – other names they are known by, i.e., equivalent fractions. Provide guidance as needed – they can multiply or divide both numerator and denominator by the same number to find an equivalent. Possibly, ask students: "How many nicknames does each fraction have?" (infinite number).
- Have students stand in a circle. Welcome them to the "Wholeness Group". Speak as a group facilitator, and tell them, "We all get lonely sometimes. We all wish we could find someone special, someone who makes us feel whole. This is your chance. When I tell you, you can go around and meet different fractions. See if you can find a fraction friend, or maybe a couple of fraction friends, with whom you make a whole. Realize you might not have the same denominator – you might have to determine a common denominator."
- Give students time to try to partner or group up. Monitor and coach as needed. Clarify that they are not finding an equivalent fraction, nor just a fraction with the same numerator or denominator.
- Generally, some students will find partners to make a whole with, and some won't – this is fine.

JOURNAL-WRITING

- Have students return to their worksheets, and write, in character, about what happened for them in the Wholeness Group. Remind them to use their vocabulary, e.g., "I met 6/9, but she was too much for me – together we were greater than 1" or "I talked to 4/10 and we had a hard time finding a common denominator."
- Allow students to share their journal entries.

Closing/Reflection

- Ask: "How did you become characters in math? How did you figure out whether another fraction could make you whole? How did these drama activities help you think about fractions?".

ASSESSMENTS

Formative

- Students participate and interact willingly in character
- Students respond thoughtfully to prompts
- Students collaborate smoothly in the "Who am I?", Meet-n-Greet and Wholeness Group activities.

Summative

- Students' journal entries reflect comprehension of the math concepts, and describe their interactions in the Wholeness Group activity.

DIFFERENTIATION

Acceleration:

- Curate the collection of fractions with a wider variety of denominators, and fractions that will be more challenging to match up.
- Have students include nicknames expressed as decimals or percentages.

Remediation:

- Help students with the “Who Am I?” activity, and stop to scaffold before students become frustrated
- Curate the collection of fractions with simpler fractions, including duplicates of different fractions.
- Model the sociometrics carefully, and take time to guide the students to their destinations.

ADDITIONAL RESOURCES

**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state’s adoption of new standards.*

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