



## Ensure Automatization through Practice and Review

### CATEGORIZING INEQUALITIES

By sorting inequalities into groups, students are able to focus on the key idea of *greater than* versus *less than* and whether or not these include the endpoints.

#### STEP 1: PREPARE CARDS.

- Create a set of note cards that include basic inequalities. Be sure to include examples for when  $x$  is before the inequality sign and after (if this has been covered).
- Create 4 heading note cards for each set. These should have the titles: *x is less than*, *x is greater than*, *x is less than or equal to*, and *x is greater than or equal to*.
- Make enough sets for each student or pair in the class to have a complete set.

#### STEP 2: CONTEXTUALIZE THE CONCEPT.

- Provide the context for this activity by reviewing the idea of inequalities with the students.
- This can be through an example problem on the board, a request to take out their notes on inequalities, or a brief discussion.

#### STEP 3: DISTRIBUTE CARDS AND EXPLAIN THE ACTIVITY.

- Give each student or pair of students a set of cards.
- Ask them to match each card to one of the heading cards.

#### STEP 4: COMPLETE THE ACTIVITY.

- As students work, allow them to make mistakes, try out ideas, and ask each other questions.
- Encourage students to verbalize their thinking by prompting them with a question, such as “What is the difference between these two cards?” when looking at  $x > 4$  and  $x < 5$ .

#### STEP 5: REVIEW CATEGORIES.

- As they wrap-up, have students explain why they put particular cards into each category.
- Extend this idea by including more complex problems related to inequalities, such as single or multi-step inequality problems.

**EXAMPLE:**

Because the goal of this activity is to have students review the concept of *greater than* versus *less than*, set the headings for each student or pair and have them match cards to their appropriate categories.

**x is greater than**

$x > 1.5$

$3 < x$

$x > -2$

**x is less than**

$x < 7$

$x < -4$

$\frac{1}{2} > x$

**x is greater than or equal to**

$x \geq -6$

$x \geq \frac{2}{3}$

$5 \leq x$

**x is less than or equal to**

$x \leq 1$

$x \leq -\frac{5}{4}$

$9 \geq x$

**HOW DOES THIS ENSURE AUTOMATIZATION  
THROUGH PRACTICE AND REVIEW?**

- This takes a concept (inequalities) that has been covered, and asks students to review it by categorizing each type of inequality.
- By having students approach it in a different manner, they can review the main points and clarify their understanding.

*Categorizing can be used to introduce concepts, review, and even assess understanding.*