

Number Trays

Activity 1

Have the students grab a handful of objects (objects pre-selected & organized so the numbers would range 15-30).

Have students put them on a tray in a way that they could convince another person how many there are without counting them by ones.

Have all students in the class bring their tray to the front and set it on tables or the floor.

Without talking each student will compare the number of objects on their trays and place their tray so that the trays are in order according to the number of objects on each.

If a tray has the same number of objects as another, then the tray will be placed perpendicular to the others.

If students question the placement of a tray have them convince each other how they know where it belongs.

Students should settle disputes without counting or simply referring to numbers.

Discuss with students their strategies in creating their number tray.

What did they do to arrange the objects so that they didn't have to count them by ones?

How were they able to organize their number trays in "order" without counting?

Was it hard? Easy? Why?

What could have made it easier?

Activity 2

Have students grab another handful of objects and place them on a tray in a way that they could convince another person how many there are without counting them by ones.

This time place the students in pairs and have them decide which tray has more or less.

Have them come to the front of the class and share their trays and tell how they know which has more or less (again without counting or just by referring to numbers).

Repeat until all students have convinced each other which of the pairs is more and which is less or equal.

Then have students place number and/or word cards to match their trays.

Ask students to share a mathematics sentence that represents what they showed. (24 is greater than 22) or (Twenty-four is greater than Twenty-two).

Students draw pictures and write a sentence of their inequalities in their journal.

Activity 3

Have students repeat activity 1 and have them put word cards (less than, equal to, and greater than) between the trays as they are ordered.

Either during or after completing the activity the students should notice that only the cards *less than* and maybe *equal to* were used (if the trays were placed in sequential order from small to large).

Challenge them to tell you what could be done so that *greater than* cards could be used.

Rearrange or re-grab and repeat.

Then challenge students to figure how to put the trays so both greater than and less than cards could be used. Allow students time to explore how to make this happen. Discuss what they did to make it happen.

Activity 4

Have students grab another handful of objects and place them on a tray in a way that they could convince another person how many there are without counting them by ones.

Place the students in pairs and have them make a right or wrong equality with the trays.

Share with the rest of the students, and let the other students tell **how** they know if it is right or wrong.

Allow students the opportunity to “reason” and “construct viable arguments” in this activity.