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Poverty #13-B

Grade 1 Mathematics: Ten-Frame Flashes

Summary:

Beginning with a warm up activity of counting by tens, students are then excused to explore Work Place Stations where they can familiarize themselves with the properties of the math manipulatives associated with current and future units. After a clean-up and a brain-break, students will develop their working memory by playing a game called Ten Flash, in which cards with differing quantities of ordered dots are briefly revealed for students to replicate on their personal number racks.

Common Core State Standards:

- Add within 20 (1.OA.6)
- Use appropriate tools strategically (1.MP.5)
- Look for and make use of structure (1.MP.7)

Lesson Objective:

I can use my Number Rack to show numbers from 0 to 10.

Materials & Set-Up:

Warm-Up: White-board & markers, post it notes & a pencil, ½ sheet of paper and tape

Work Place Stations:

- Unifix Cubes
- Pattern Blocks
- Polydrons
- Dominoes
- Laminated 11”x17” pages with ordinally labeled 2x5 arrays (see below)

1	2	3	4	5
6	7	8	9	10

Brain Break: Overhead projector connected to laptop with internet access
Ten Flash Game: Ten-Frame Five-Wise Display Cards, Display Number Rack, and Student Number Racks
Debrief: Math Journals, crayons

Procedure:

Warm-Up As a warm-up, have students choral count by 10s to 100.

- Students return from recess to carpet/learning discussion area. Before entering, reminder of expectation - go directly to carpet spots with hands to self, wait *patiently* with a zero voice.
- As students are seating themselves, publicly commend and pass out post-it notes to students modeling excellent *patience*. Starting with zero, write a different multiple of ten on each post-it note up to 100. Add student names as you pass them out.
- Thank class for taking their seats so *patiently*, direct attention to the whiteboard where the learning objective and an open, blank number line with 11 hatch-marks are already written. Read and repeat the learning objective with students and sketch a hand under "use," a Number Rack, and an eye under "show."
- Prompt "turn-and-talk" chat time by pointing to the empty-value Number Line and the following questions: "What is this Math Model called? How do you use it to count?" and fill in the values 0-100 as students discuss with a neighbor. Listen for any student who uses the phrase "Number Line."
- After gaining class's attention share, "I heard _____ & _____ call this Math Model a Number Line. Raise your hand if that sounds familiar to you, even if you are only just now thinking 'Oh yeah! I *remember* that Number Line!' Good job, using your *memory*. Let's count along by 10s together along this Number Line."
- Point to the 0 on the line. Then point at each of the multiples of 10, as students choral count by 10s aloud. Ask students who received each post-it note to raise and repeat their number as the class counts along the Number Line.
- After they reach 100, have students start at 100 and count backward by 10s as you point to each multiple along the Number Line. Ask for students who received each post-it note to repeat their number as the class counts. Collect the post-its as you go, posting each under the corresponding multiple along the line.

- Prompt “turn-and-talk” chat time: “How many times can you go up and down the Number Line in 1 minute?” Use this time for any needed redirections or guided practice for students who are not showing proficiency.
- After gaining class’s attention announce it is time for a game to practice their skills. The game is called “What’s Missing?” It will test their *memory* and it will take *patience* to keep from blurting.
- Prompt students to try and *memorize* all the multiples from 0-100, because you are going to cover (demonstrating) one of the multiples of ten and they will have to figure out which one you covered *silently and patiently.*
- Ask students to cover their eyes. While they are doing so, tape a ½ sheet of paper over a multiple of ten on the Number Line.
- Students open their eyes and are given the count of ten to silently think about which number is missing before sharing with a neighbor their guess and how they figured it out.
- Discuss as a group and ask each student who had their name on the post-its to come up and pick the next multiple to go missing. Repeat 2-3 times.

Work Stations Dismiss students to Work Station that investigate amounts up to 10.

- Thank students for a great warm up and, showcasing a laminated 2x5 “Array Mat” and Display Number Rack, re-read and repeat the day’s learning objective.
- Prompt “turn-and-talk” chat time: “How does this Number Rack match this Array?”
- Call on several students to share, supporting observations to demonstrate connections between *quantity* or *arrangement*. Connect the ten squares of the Array to the ten red beads and the ten white beads of the Number Rack and the learning objective.
- Prepare students to *patiently listen and remember directions* with a playful pantomime of standing up and putting on their listening ears, shaking the dust and sillies out, and then sitting *patiently* back down when they’ve had a chance to move their bodies and be ready to *listen and remember.*
- Briskly visiting and naming each Work Station by the manipulative featured, leave each station 6 Array Mats and “challenge” the students to “explore and show what 1 (insert manipulative name), 2 (insert manipulative name)s, all the way to 10 (insert manipulative name)s might look like.”

- Using the post-it notes to manage the transition, call on individual students to choose a Work Station first, ***then*** ask "Who would like to explore amounts from 1-10 with _____ at the _____ Work Station?" (count of 3 or teacher selection)
- No more than 3 partner groups at any station, remind disappointed students there will be 1 switch, write down names and choices on white board and thank them for their *patience*.
- Circulate as students engage in materials, noting how they use the manipulatives, encouraging them to engage mathematically, and redirecting off-task behavior.

Brain Break/Transition:

- After gaining class attention, play the clean up song, bring class to discussion area, and play a quick game of "Simon Says."
- Share observations noted during circulation, and using the list, excuse student partner groups to make their second Work Station selection.

Work Stations: Support students at Work Station that investigate amounts up to 10.

- Circulate as students engage in materials, noting how they use the manipulatives, encouraging them to engage mathematically, and redirecting off-task behavior.

Brain Break/Transition:

- After gaining class attention, play the clean up song, bring class to discussion area, and project 2 Go Noodle videos, a fun song, and then "Unwind" from the Mindfulness series.
- Excuse students to gather their Number Racks and sit at their individual work stations.

Ten Flash Game: Strengthen memory and number sense in a matching game.

- Thank students for a great Work Station session and, showing the 0-dot Ten-Frame Five-Wise Display Card and the Display Number Rack, re-read and repeat the day's learning objective using choral response.
- Prompt "turn-and-talk" chat time: "How does this Number Rack match this Ten Frame?"
- Call on several students to share, supporting observations that demonstrate connections between *quantities* or *arrangements*. Connect the ten squares of the Array to the ten red beads and point out that at 0 dots all the red beads would be slid over to the left side with the white beads.

- Call a stick and have that student demonstrate how to set up the beads on the Display Number Rack. Ask class to copy and hold up their personal Number Racks once they match. Thank student demonstrator and announce that the class has just scored their first point in a game called Ten Flash. Mark point on the board.
- Explain that you will show students the ten-frame cards one at a time, and they will use their *memory* to make the red beads on their number rack match what they see. You'll show each card for a very short time, so they'll have to watch carefully.
- To score a point, class must all move their beads and raise their Number Lines. Call student demonstrators for a "bonus point" if many Number Racks seem off.
- Continue playing the game, using all the Ten-Frame Five-Wise Display cards at random.
- Once students become comfortable with the procedure, announce they will start "turbo training" their *memory* by progressively shortening the amount of time they can see the cards. Progress until 2 seconds or >50% of class is accurate.
- Announce final score and celebrate with a silent cheer or student selected mime.

Debrief: Provide processing time and higher order thinking.

- Play instrumental music as the signal to get Math Journals and crayons.
- Students make an entry in their math journals, consisting of *at least* the date, copying the Learning Target, and an illustration, sentence, or a combination to show their work.

Adaptations:

I am adapting a lesson from the Bridges in Mathematics curriculum that is the recent adoption by my school district. The lesson is appears midway through the second module of the first unit, which is focused on strategies to assist in addition to ten. I chose this lesson because it was the next day's assignment from the class my interviewee in Assignment 12 teaches. I could see the materials that were to be used and the locations in the classroom where it would occur. I could also consider the specific context of when in the day's schedule the math period appears.

My first major adaptation was to add art and increase the enrichment of my environment by attaching specific songs to transitions and routines, as in the illustration/reflection math journaling at the end for processing time. I decided to build in Go

Noodle breaks that allow for adjustment time for students that struggle with transitions and fun for the students who are ready to learn and self-managing.

I also decided to flip the Bridges sequence of using the Work Stations as a reward for students that are able to focus and complete work, and instead made it the dessert-first enrichment model focus of the lesson. Flash-Ten is quick to grasp, and would be more successful to kids who have already had time to have a physical sense of quantities from 0-10, so I decided to compress the game to the end of my 60 minute math block. My students have rarely received pre-kindergarten enrichment and still need to explore and develop their kinesthetic and visual intelligence potentials through hands on manipulation of the foundational mathematical tools used in the Bridges math curriculum. I decided to add the “Array Place Mats” as a structure both for space and activity focus, but a potential inroad for advancing connections for students who are show engagement in the activity.

Throughout the lesson I tried to model and articulate social-emotional intelligence as well as meta-cognition through an emphasis on patience and memory as skills associated with behavioral expectations, the learning target, and their innate characteristics. My hope is to provide and build hope and perseverance.