|  |
| --- |
| **Unit 1- Fluency with Addition and Subtraction Within 20 Grade 1** |
| **Lesson #1** | **Lesson #2**  | **Lesson #3** | **Lesson #4** | **Lesson #5** |
| **Teaching Point*** Getting to know each other
* Collecting & Representing Data
* Introduction to Turn & Talk
* Posting Focus Question
* Introduction to Math Journal

**Mini-Lesson** Whole Class Survey- Birthday Bar Graph**APS** Post and reference focus question every day for each lesson. Students will work with children that share the same birthday month to order themselves from least to greatest.**Assessment Point** * Look for students who can identify or have difficulty identifying numbers to 30.
* Notice students who are able to put numbers in order from least to greatest.
* Are students able to turn and talk and/or work with a small group to complete the task?

**Focus Question**What can we learn about this class from the data we collected? | **Teaching Point*** Getting to know each other by choosing a survey question
* Investigation-collecting and representing data
* Working with a partner

**Mini-Lesson** Students will work together to sort shoes by laces and no laces. Using a fishbowl partnership behaviors will be modeled.  **APS** Post survey questions and let partnerships choose the survey they would like to complete and send students off to ask 10 children their survey question.**Assessment Point*** Are students able to work cooperatively?
* Are students able to survey their peers and accurately record the data?

**Focus Question**What is important to remember to do when working with a partner? | **Teaching Point** * Getting to know each other
* Representing & Interpreting data
* Introduction to the Gallery Walk

**Mini-Lesson** Using the shoe survey from the previous lesson model how to use survey information to create a graph.**APS**Students will use their survey information and create and label a bar graph. **Assessment Point*** Are students able to take information from their survey and accurately record it on a graph?
* Are students able to walk around, notice, and interpret data?

**Focus Question** What does the information from the graph tell us? Which graph was the easiest to read? Why? Why do we have a gallery walk? | **Teaching Point*** Getting to know each other
* Representing, interpreting data, writing meaningful comments
* Introduction to the Math Congress

**Mini-Lesson**Students will look at each other’s graphs and learn how to make meaningful comments.**APS**For today, the active problem solving is whole group in the mini-lesson.**Assessment Point** * Are students able to read and interpret the data from their graph?
* Are students able to make meaningful comments?

**Focus Question** What is a meaningful comment? What is the purpose of the math congress? | **Teaching Point*** Subitizing small numbers
* Introduce the Math Strategy Chart

**Mini-Lesson** Play Capture the Dots (2-6) with students.**APS**Students will play the game Capture the Dots with a partner.**Assessment Point**As you confer with students note strategies students use. This gives great insight into their conceptual understanding and mathematical development of big ideas.* Subitizing (seeing at a glance) small groups of objects (2-6)
* Subitizing larger arrangements by combining smaller groupings
* Counting with one-to-one matching (tagging with synchrony)
* Cardinality -the last number said tells ‘how many’
* Conservation of number – Trust the count (can count on vs. count all) -The arrangement of objects does not affect how many there are.

**Focus Question** How many dots do you see? How do you know? |
| **Lesson #6** | **Lesson #7** | **Lesson #8** | **Lesson #9** | **Lesson #10** |
| **Teaching Point**Subitizing small numbers**Mini-Lesson**Play Capture the Dots with a larger number of dots- 7 – 10 with students. **APS** Students will play the game Capture the Dots (7-10) with a partner.**Assessment Point**As you confer with students note strategies students use. This gives great insight into their conceptual understanding and mathematical development of big ideas.* Subitizing (seeing at a glance) small groups of objects (3-5)
* Subitizing larger arrangements by combining smaller groupings (7-10)
* Counting with one-to-one matching (tagging with synchrony)
* Cardinality -the last number said tells ‘how many’
* Conservation of number – Trust the count (can count on vs. count all) -The arrangement of objects does not affect how many there are.

**Focus Question** How many dots do you see? How do you know? | **Teaching Point*** Subitizing five and ten Counting
* Introduce the math rack tool

**Mini-Lesson**Familiarizing students with the math rack and model how to play the game Math Rack to 10.**APS**Students will play the game Math Rack to 10.**Assessment Point** * Subitizing (seeing at a glance) small groups of objects (3-5)
* Subitizing larger arrangements by combining smaller groupings
* Counting with one-to-one matching (tagging with synchrony)
* Cardinality -the last number said tells ‘how many’
* Hierarchical Inclusion – know that 5 contains 4 and 6 contains 5
* Equivalence and compensation
* Conservation of number – Trust the count (can count on vs. count all) -The arrangement of objects does not affect how many there are. The arrangement of objects does not affect how many there are.
* The order in which a set of objects is counted does not affect how many there are.
* Part-Part-Whole – interpret small numbers as a composition of other numbers. Do students compose and decompose numbers using part-whole relationship?

**Focus Question**What number is on the math rack? How do you know? | **Teaching Point*** Subitizing five and ten
* Counting
* Equivalence and Compensation
* Introduce the math rack tool

**Mini-Lesson** Ways to make different numbers.**APS**Students will work to find all the ways to make 8.**Assessment Point*** Subitizing (seeing at a glance) small groups of objects (3-5)
* Subitizing larger arrangements by combining smaller groupings
* Counting with one-to-one matching (tagging with synchrony)
* Cardinality -the last number said tells ‘how many’
* Hierarchical Inclusion – know that 5 contains 4 and 6 contains 5
* Equivalence and compensation
* Conservation of number – Trust the count (can count on vs. count all)-The arrangement of objects does not affect how many there are.
* The order in which a set of objects is counted does not affect how many there are.
* Part-Part-Whole – interpret small numbers as a composition of other numbers. Do students compose and decompose numbers using part-whole relationship?

**Focus Question** How many number combinations can you find to make the number 8? Are any of the arrangements the same? Do you have all the combinations? How do you know? | **Teaching Point*** Compensation and Equivalence
* Subitizing,
* Counting,
* Part Whole Relationships
* Five and ten structure

**Mini-Lesson** Students will learn how to play Hide the Counters and use effective strategies for solving problems with a missing addend.**APS**Students will play Hide the Counters.**Assessment Point** * Do students guess randomly?
* Are they counting on?
* Are they counting back?
* Do students compose and decompose numbers using part-whole relationship?
* Do they use facts they know to help with facts they don’t know, using compensation?

**Focus Question** How many counters are hidden? How do you know? | **Teaching Point*** Equivalence
* Numbers can be composed and decomposed

**Mini-Lesson**Demonstrate how to play the game, Capture Five with a student partner.**APS**Students will play Capture Five with a partner.**Assessment Point**This activity promotes part-whole relations. It also helps students visualize the missing addend (4 + ? = 8) as they construct it on the math rack. * Hierarchical Inclusion- know that 5 contains 4 and 6 contains 5
* Equivalence and compensation
* Part-part-whole- interpret small numbers as a composition of other numbers. Do students compose and decompose numbers using part-whole relationship?

**Focus Question**What number did you combine with the lesser number to make the larger number? How did you know? |
| **Lesson #11** | **Lesson #12** | **Lesson #13** | **Lesson #14** | **Lesson #15** |
| **Teaching Point*** Place Value
* Composing teen numbers

**Mini-Lesson**Model how to play the game Hide the Zero with a student partner. **APS**Students will play Hide the Zero with a partner.**Assessment Point*** Are students “counting all”?
* Are students using the 5 and 10 structures when building and discussing number relationships?
* Are students making a connection between the full ten-frame and the “1” in the teen number?

**Focus Question**How do you write teen numbers? What does the “1”mean in a teen number 15? What does “5” mean? | **Teaching Point*** Place Value
* Composing teen numbers and twenties

**Mini-Lesson**Review with students how to build teen numbers. Model using the same format as lesson 11 how to build numbers in the twenties. **APS** Students will work to build teen numbers and numbers in the twenties.**Assessment Point*** Are students “counting all”?
* Are students using the 5 and 10 structures when building and discussing number relationships?
* Are students making a connection between the full ten-frame and the “1” in the teen number?
* Are students making a connection between the two full ten-frames and the “2” in the twenty?
* Do students see the connection between the written twenty number and it being made of two tens and some loose (ones)?

**Focus Question** How do you write teen numbers and numbers in the twenties? What does the “2” mean in the teen number 24? What does the “4” mean? | **Teaching Point*** Place value
* Decomposing teen numbers

**Mini-Lesson**Decomposing teen numbers and introducing the number bond model. **APS**Students will independently decompose/break apart teen numbers, completing the ten-frame recording sheet.**Assessment Point** * Are students counting by 1s to find the total amount or are they seeing the teen number as ten and some loose?
* Do students see the connection between the written teen number and it being made of 10 and some loose (ones)?
* Are students making the inverse connection between composing and decomposing teen numbers?
* Are some students understanding the teen number as unitizing a ten and some ones- not needing the number bond or ten frame model?

**Focus Question**How do you decompose/break apart a teen number? | **Teaching Point*** Subitizing five and ten
* Counting to 20
* Using the math rack to focus on 11-20

**Mini-Lesson** Review the math rack numbers 11-20. Students will learn how to play the game Math Rack to 20.**APS**Students will play Math Rack to 20 with a partner. **Assessment Point*** Subitizing (seeing at a glance) small groups of objects (3-5)
* Subitizing larger arrangements by combining smaller groupings
* Counting with one-to-one matching (tagging with synchrony)
* Cardinality -the last number said tells ‘how many’
* Hierarchical Inclusion – know that 5 contains 4 and 6 contains 5
* Equivalence and compensation
* Conservation of number – Trust the count (can count on vs. count all) -The arrangement of objects does not affect how many there are. The arrangement of objects does not affect how many there are.
* The order in which a set of objects is counted does not affect how many there are.
* Part-Part-Whole – interpret small numbers as a composition of other numbers. Do students compose and decompose numbers using part-whole relationship?

**Focus Question** What number is on the math rack? How do you know? | **Teaching Point*** Place value
* Composing numbers 20 and beyond

**Mini-Lesson** Students will use their fingers and ten-frames to compose numbers 20 and beyond.**APS**Students will work in two teams to build numbers 20 and beyond. **Assessment Point** * Are students counting by 1s to find the total amount or are they seeing the tens and some loose?
* Do students see the connection between the written number and it being made of 10s and some loose (ones)?
* Are students making the inverse connection between composing and decomposing two-digit numbers?
* Are students understanding the two-digit number as unitizing tens and some ones- not needing models to compose the number?
* Are students able to flexibly represent the two-digit number with manipulatives, models, and the written number?

**Focus Question** How do you compose/build and write numbers 20-99? |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Lesson #16** | **Lesson #17** | **Lesson #18** | **Lesson #19** | **Lesson #20** |
| **Teaching point*** Investigating doubles

**Mini-lesson**Using children as the model begin to develop the strategy of doubles through story problems. **APS**Children will independently draw different scenarios representing doubles.**Assessment Point*** What strategies were students using? These strategies might include:
* Drawing lines of children with the two lines not equal in number
* Double tagging or skipping objects as they count.
* Counting each line separately and then counting again to find the total
* Counting on from the first line
* Skip-counting by twos
* Using previous results to solve a new problem

**Focus Question**What strategy did you use to find the total number of children in two lines? What strategy did you use to find the number of students in each line if you know the total number of children? | **Teaching Point*** Investigating doubles

**Mini-Lesson**Students will continue their work from lesson 15 today with a partner.**APS**Children will work with partners to draw different scenarios representing doubles. These will be used during the reconvene to create an open number line.**Assessment Point*** What strategies were students using? These strategies might include:
* Drawing lines of children with the two lines not equal in number
* Double tagging or skipping objects as they count.
* Counting each line separately and then counting again to find the total
* Counting on from the first line
* Skip-counting by twos
* Using previous results to solve a new problem

**Focus Question**What strategy did you use to find the total number of children in two lines? What do you notice about the numbers that you get for the total number of children in two lines? | **Teaching Point*** Investigating doubles

**Mini-Lesson**Discuss doubles in the world. Using the context of egg cartons explore different size egg cartons and how many eggs they hold.**APS**Students will choose a double and design an egg carton.**Assessment Point*** Are students using doubles to find the total?
* Are students using doubles to help find other doubles?
* Are students still using multiple counts for the same egg carton?

**Focus Question**How many eggs are there in each of your egg cartons? How do you know? | **Teaching Point*** Investigating doubles

**Mini-Lesson**Ask children to share other doubles in the world around them. Develop a shoe scenario and model how to draw shoes for each member of your family.**APS**Students will record the number of people they are thinking about and draw a pair of shoes for each person.**Assessment Point*** Are students counting over and over again to be certain the amount is still the same?
* Are students counting the shoes by ones?
* Are students skip-counting the shoes by twos?
* Which students understand the relationship between pairing and doubling?
* Which students use know doubles to figure out you know doubles or near doubles?
* Do students realize that the total is the double of the number of family members?

**Focus Question**How many shoes did you draw altogether? How do you know? | **Teaching Point*** Solving a problem using doubles

**Mini-Lesson**Show the children each of the billboards for a few seconds. Ask them how many did you see and how did you know.**APS**Children will draw their favorite pair of shoes. As a class, come up with the total number of shoes. Children will work with a partner to make a poster illustrating how many individual shoes there are in the class.**Assessment Point*** Using the class roster and counting by twos
* Using the doubles posted on the open number line or the highlighted numbers in the pocket hundred chart to help with the count
* Using a t-chart like the one used in the previous lesson

**Focus Question**How many total shoes are drawn o the class set of index cards? |
| **Lesson #21** | **Lesson #22** | **Lesson #23** | **Lesson #24** | **Lesson #25** |
| **Teaching Point*** Solving a problem using doubles

**Mini-Lesson**Students will conduct a Gallery Walk to view each other’s work from lesson 19.**APS**Students will play Finding Doubles with a partner.**Assessment Point*** Do they know the doubles of the numbers automatically or are they referring to the class double strip in the room?
* Do they visualize the double, use the five- structure, or need to count beads on the math rack?
* Which numbers were left uncovered at the end of the game? Do students realize why this happened?

**Focus Question**What strategy did you use to find the double of the number on the card when playing the Finding Doubles game? | **Teaching Point*** Exploring doubles in a different context

**Mini-Lesson**Read the story Grandma’s Necklace. Introduce how the student’s will work to solve the bead pattern problem.**APS**Students will work with a partner to solve the first bead pattern necklace problem.**Assessment Points*** Which students are struggling with maintaining the bead pattern?
* Which students are randomly using trial and error without reflecting on their results?
* Which students are able to generalize the pattern of the numbers that work?
* Which students are able to justify this conjecture?

**Focus Question**What numbers of beads could Mei-Lee use for this pattern? Is there anything special about these numbers? | **Teaching Point*** Exploring doubles in a different context

**Mini-Lesson**Begin by rereading part of the story Grandma’s Necklace where the second pattern is introduced.**APS**Students will work with a partner to solve the second bead pattern necklace problem.**Assessment Points*** Which students are struggling with maintaining the bead pattern?
* Which students are randomly using trial and error without reflecting on their results?
* Which students are able to generalize the pattern of the numbers that work and which students are able to justify this conjecture?
* Which student viewed the beads as forming groups of five and treated each group of five as a unit?

**Focus Question**What numbers of beads could Mei-Lee use for this pattern? Is there anything special about these numbers? | **Teaching Point*** Exploring doubles in a different context

**Mini-Lesson**Begin by rereading part of the story Grandma’s Necklace where the third pattern is introduced.**APS**Students will work with a partner to solve the third bead pattern necklace problem.**Assessment Points*** Which students are struggling with maintaining the bead pattern?
* Which students are randomly using trial and error without reflecting on their results?
* Which students are able to generalize the pattern of the numbers that work and which students are able to justify this conjecture?
* Which students noticed that the number of beads of each color increases by three for each necklace that works, while the total number of beads in these necklaces increases by six?

**Focus Question**What numbers of beads could Mei-Lee use for this pattern? Is there anything special about these numbers? | **Teaching Point*** Exploring doubles in a different context

**Mini-Lesson**Using a hundreds chart and 3 different insert colors mark the chart with the bead patterns. Ask students to predict if there are any other special numbers.**APS**The teacher can choose to do a whole group APS or partnerships to explore other special numbers.**Assessment Points**Think about your students over the course of this unit. Do they understand doubles, even and odd numbers, counting strategies, the use of doubles and near doubles to automatize the basic facts, and the making and proving of conjectures and generalizations?**Focus Question**What numbers work for more than one necklace pattern? What is special about these numbers? |
| **Lesson #26** | **Lesson #27** | **Lesson #28** |
| **Teaching Point*** Equivalence and compensation
* Doubles strategy

**Mini-Lesson**Students will make doubles on their math rack.**APS**Students will work to find all the doubles they know from 1-20 with a partner.**Assessment Points*** Are students counting on?
* Are they using a compensation strategy?
* Do some students depend o manipulating the math rack to see the doubles or do they use the math rack to prove their reasoning?
* Are some students till counting on?

**Focus Question**Which numbers from 1-20 can be built using doubles? What are the doubles? | **Teaching Point**Thinking doubles to use near doubles as an addition strategy**Mini-Lesson**Students will learn that doubles and near doubles can be helpful strategies. Model how to play the game Near Doubles.**APS**Students will play the game Near Doubles with a Partner.**Assessment Point*** Do they count on?
* Do they know their doubles facts?
* Do they count by ones?

**Focus Question**How does knowing the doubles facts help you solve equations with near doubles? | **Teaching Point*** Equivalence and compensation
* Doubles and near doubles strategy

**Mini-Lesson**Review near doubles with the class using a math rack.**APS**Students will work with a partner to create a poster showing all the near doubles from 1-20.**Assessment Point*** Are they using the compensation strategy?
* Do some students depend on manipulating the math rack to see the doubles or do they use the math rack to prove their reasoning?
* Are students counting on?

**Focus Question**Which numbers from 1-20 can be built using near doubles? How could you write the near doubles numerically? |