**Unit Title:** Numbers Tell a Story: Introduction to Place Value with Sums and Differences to 20

**Created By:** Lesley Doane

**Subject:** Math

**Grade:** 1st

**Estimated Length:** 3 weeks. Lessons will be taught Monday – Friday within a one hour block of time. This is equivalent to 18 lessons.

**Unit Overview:** This is a digital based inquiry unit. Students will use place value understanding and properties of operations to add and subtract within 20 through the power of narrative. Students who talk, write, read, and reason in Math become engaged in metacognitive exploration. The Mathematical Council of Teachers of Mathematics states that to communicate mathematically, students need to “think, question, solve problems, and discuss their ideas, strategies, and solutions” (NCTM 18) and to “listen to and understand conjectures and explanations offered by others” (NCTM 57). {www.readwritethink.org}. Through this unit, students will learn that numbers tell a story.

**Unit Rationale:** This unit is based on Math and ELA Common Core State Standards. Students will learn through both narrative and mathematical practices. Lessons are designed around three levels of learning: active, iconic, and symbolic. Math does not come easily to every child. It can be difficult, frustrating, limited, and mysterious. When a child thinks that everyone else around them can do something quickly and correctly but they find themselves struggling to know where to begin, life in the classroom can become a very lonely and unhappy place to be. Providing opportunities for children to learn through exploration and creating dialogue in the classroom community is crucial to building a strong foundation of math computation skills. Children need to explore and play with numbers, using a variety of tools and resources. They need to work in an environment where mistakes can be made, and don’t even have to be erased. Many children think that “doing math” is equivalent only to paper and pencil worksheets that are timed and HARD! When children learn that math is about exploring relationships amongst numbers, this reinforces the concept that math is truly everywhere in the world around them. Math should be an exciting world of numbers, where everything just makes sense, because all numbers have a story to tell.

There are three identifiable shifts within this unit:

**Shift One:** Students will build knowledge and academic language through a balance of content rich, complex nonfiction and literary texts.

**Shift Three:** Students will use digital resources strategically to conduct research and create and present material in oral and written form.

**Shift Four:** Students will collaborate effectively for a variety of purposes while also building independent literacy skills.
Targeted Standards:

Idaho Core Grade-Level Standards:

- CCSS.MATH.1.OA.B.3 – Understand and apply properties of operations and the relationship between addition and subtraction {apply properties of operations as strategies to add and subtract.}
- CCSS.MATH.1.OA.B.4 – Understand and apply properties of operations and the relationship between addition and subtraction {understand subtraction as an unknown-addend problem.}
- CCSS.MATH.1.OA.C.6 – Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.
- CCSS.MATH.1.NBT.B.2 – Understand that the two digits of a two-digit number represents amounts of tens and ones.
- CCSS.ELA-LITERACY.RL.1.1 – Ask and answer questions about key details in a text.
- CCSS.ELA-LITERACY.RI.1.2 – Identify the main topic and retell key details of a text.
- CCSS.ELA-LITERACY.RI.1.3 – Describe the connection between two individuals, events, ideas, or pieces of information in a text.
- CCSS.ELA-LITERACY.RI.1.4 – Ask and answer questions to determine or clarify the meaning of words and phrases in a text.
- CCSS.ELA-LITERACY.RI.1.6 – Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
- CCSS.ELA.LITERACY.RI.1.7 – Use the illustrations and details in a text to describe its key ideas.
- CCSS.ELA.LITERACY.RI.1.10 – With prompting and support, read informational texts appropriately complex for grade 1.
- CCSS.ELA.LITERACY.RF.1.4 – Read with sufficient accuracy and fluency to support comprehension.
- CCSS.ELA.WRITING.W.1.6 – With guidance and support from adults, use a variety of tools to produce and publish writing, including in collaboration with peers.
- CCSS.ELA.WRITING.W.1.8 – With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- CCSS.ELA.SPEAKING&LISTENING.1.1 – Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
- CCSS.ELA.SL.1.2 – Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
- CCSS.ELA.SL.1.3 – Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
- CCSS.ELA.SL.1.5 – Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
CCSS.ELA.SL.1.6 – Produce complete sentences when appropriate to task and situation.
CCSS.ELA.LANGUAGE.1.1 – Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA.L.1.2 – Demonstrate command of the conventions of standards English capitalization, punctuation, and spelling when wrong.

Focus Standards for Mathematical Practice:
- MP.2 – Reason abstractly and quantitatively.
- MP.4 – Model with mathematics.
- MP.7 – Look for and make use of structure.
- MP.8 – Look for and make use of repeated reasoning.

Essential Questions:

*Why is it important to know the value of a number?*

Enduring Understandings:

- Numbers and digits have value.
- Numbers and digits can be represented in different ways.
- We follow a number system.
- Numbers can be composed of 10’s and 1’s adding to and taking away from.
- Functions of a symbol.
- Numbers change in value depending on position.
- Numbers can be taken apart and put back together again.
- There can be more than one strategy to solve a math problem.
- Math problems can have multiple solutions.
- Numbers can be observed.
- We can write predictions about numbers.
- We can write and talk about numbers.
- Numbers tell a story.

Measurable Outcomes:

Learning Goals: The student will be able to:

- identify why it is important to identify the value of a number.
- solve equations with 1 – 2 digit numbers.
- solve equations with 1-2 digit numbers using multiples of 10.
- identify strategy used to solve equations and explain reasoning behind the method used.
- identify reasoning behind the method used.
- model how to add 1’s, 10’s and 1’s, 10’s and 10’s, or compose a 10.
explore attitudes and feelings about math by responding to open-ended prompts in their math journals.

- participate in dialogue with peers and write about their predictions for assigned tasks.
- work in small groups to find multiple solutions, write about solutions, strategies, and other observations in their math journals.
- identify positive attitudes and successful problem solving.
- revisit journal entry and assess how and why (if) their attitude has changed.

**Student-Friendly Learning Targets:** *Use place value understanding and properties of arithmetic to perform multi-digit arithmetic. Claim 1m.*

- I can solve number sentences using addition and subtraction.
- I can count from 1 – 20.
- I can write my numbers from 1 – 20.
- I can identify a strategy to help me solve number sentences.
- I can explain how I solved my number sentence.
- I can use tools or make a drawing to solve number sentences.
- I can use tools to group a number into 10’s and 1’s.
- I can compose a 10 or decompose a 10.
- I can add and subtract within 20.
- I can write on my feelings about math.
- I can talk to my peers about problem solving.
- I can make and write predictions in my journal.

**Success Criteria:**

- Use informative visual/digital checklist to record observations.
- Incorporation of anchor charts.
- Video of students working through solving problems & applying known strategies using tools or other models.
- Math journal prompts.
- Entry in shared project, *The Important Book.*
- Rubric for final DBI and independent response.
- Ask: Can you teach a friend?
- Diagnose student strengths and needs.

**Summative Assessment:**

- Students will use white boards and appropriate tools to solve number sentences provided by the teacher after first identifying a strategy to use, show their work, and verbally explain the reasoning behind their chosen method.
• Students will model number sentences using various tools and manipulatives in order to demonstrate how to compose a 10 and some 1’s and decompose from a 10.
• Students will collaborate with peers on two DBI projects. Student conversations and demonstration of methods will be recorded in both written and digital form.
• Students will write in reflective journals, based on open-ended prompts.
• Students will complete a final reflection piece identifying their attitudes and dispositions about math.

Rubric or Assessment Guidelines:
Communication: checklists, verbal & written comments.
Role – myself, as teacher.
Evaluation method: rubric of quality criteria, holistic.
Performance-based: show your work, written constructed response on white board or worksheet/journal.
Product – interactive journal, shared project entry, model using tools.
Process focused – observation, “kid watching”.
Purpose – diagnose student strengths & needs, provide feedback on student learning, inform and guide instruction.

Depth of Knowledge (DOK):
Explanation #1 - TSWBAT recall or reproduce knowledge and/or will use simple procedures and/or formulas.
Explanation #2 - TSWBAT explain reasoning behind strategy & application used, identify relationships between addition and subtraction.
Explanation #3 – TSWBAT clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.
Explanation #4 – TSWBAT analyze complex, real world scenarios, construct and use mathematical models to interpret and solve problems.

Central Text:
Stuck, by Oliver Jeffers – A tale of trying to solve a problem by throwing things at it.

Text Complexity Analysis:
Quantitative: Grade Level PreK-5
Qualitative:
Text Structure: Slightly Complex – story line is clear, chronological, and follows a pattern. Use of colorful illustration directly support and assist in interpreting the text, making the story come to life. Storyline is similar to familiar text, such as There Was an Old Woman Who Swallowed a Bat The font is fancy, which may detract some readers from decoding text.
Language Features: Slightly Complex – conventions are straightforward and easy to understand. Vocabulary is contemporary and familiar, with most words used conversationally. Some words may need further explanation (verbs and adjectives). Simple sentence structure.
Meaning/Purpose: Slightly Complex – there is only one level of meaning. The theme is easy to identify and is revealed early in the text.
**Knowledge Demands: Slightly Complex** – storyline explores a single, familiar theme, which is relatable to children of this age. Everyday experiences, though exaggerated, are common to most readers. Possible unfamiliar knowledge demand – the author is British, so some language or illustrations may be more common within a European culture.

**Reader-Task Standards:** The following has been considered to identify if this unit is appropriate to the age of the reader.

- *Students will be able to make connections and analyze text, identifying relationships between events and characters.*
- *Students will be able to make references, visualize and/or describe events, question, and comprehend text.*
- *Students will be interested in the content and be engaged with this style of writing and ideas presented.*
- *Students will possess prior knowledge and/or experiences needed to manage the content and vocabulary within text.*
- *Students will be able to identify the theme, which is appropriate to the maturity of the reader.*
- *Students will be able to complete the tasks required without any interference toward the reading experience.*

CCSS.ELA-LITERACY.RL.1.1 – Ask and answer questions about key details in a text.

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**Supporting informational texts:** envision math 2.0 Volume 1 and 2

**Supporting Literary Text:** Stuck, by Oliver Jeffers and The Important Book, by Margaret Wise Brown

**Art/Music/Media:**
- YouTube clips: Numbers in the Teens (They start with a one); Place Value by Chasulee; Place Value Song & Story
- Websites: www.readwritethink.org (resource for math journal prompts)

**Other Materials/Resources:**
- interactive journals, white boards, white board markers, chart paper, number lines, 10 frames, base 10 blocks, pennies, rulers, various counters, rekenrek, checklist & rubric, various sized envelopes, construction paper, sentence strips, markers, crayons, pencils, i-PADS.

**Targeted Vocabulary:**
**Academic:** When and how it will taught: introduced prior to a lesson or embedded within and revised daily (some at calendar). Other vocabulary developed through spaced practice but always spiraling back, because these terms are essential to learner tasks. Visually displayed on board and seen on written assignments.
- Counting
- Groups
- Design
- Different
- Label
- Fluency
- Visualize
- Altogether
- Predict
Content: When and how it will be taught: These words are more specific to particular activities within a lesson and will be defined and used throughout that day(s) or week(s). Others are multi-meaning words and will require clarification to which subject or situation they refer.

- Patterns
- Tens
- Ones
- Number
- Digit
- Equals
- Sign
- Strategy
- Number bonds
- Teen numbers
- Solve
- Number sentence
- Ten frame
- Total
- Problem
- Expressions
- Add
- Subtract
- Plus
- Minus
- Solution
- Graphic map
- Value

Universal Design of Learning:

1. **Provide Multiple Means of Representation**
   - Information will be offered through visual and auditory display (anchor charts, white board & teacher modeling, doc camera, you tube videos, note catchers, and manipulatives).
   - Content and Academic vocabulary will be introduced, developed, and/or mastered.
   - Mathematical notations and symbols will be introduced and/or reviewed.
Decoding of text will be done with peer and/or adult guidance and support based on grade level appropriate text.

Lessons can be delivered pre and post instruction to support staff of both ELL and Special Ed programs to assist students on individualized plans.

Multiple comprehension strategies will be used such as: scaffolding, summarizing, and frontloading, to activate or supply background knowledge.

Note catchers, math journals, anchor charts, graphic maps, digital devices, highlighting tools, and other resources will be used to identify patterns, critical features, big ideas, and relationships.

2. **Provide Multiple Means of Action and Expression**

- Classroom transitions occur frequently and quickly, to allow for physical action.
- Student responses vary between written, oral, independent, partner, small, group, and whole group.
- Students will have access and ownership of: classroom resources, digital devices (i-PADS, computers, flip cameras, headphones, listening center, etc.), stress tools, or any other accommodation pertinent to support student learning.
- Communication will be through teacher/student dialogue, written and visual text, youtube videos, music recordings, and manipulatives.
- Students will have opportunity to build fluency with graduated levels of support for practice and performance through text excerpts outlined on note catchers and audio/visual aid at the listening and/or computer stations.
- Student learning targets will be identified and reviewed in accordance with pacing of unit plan.

3. **Provide Multiple Means of Engagement**

- Individualized choice and autonomy will be reached through dialogue, journal entries, and independent tasks and assignments.
- Students will be encouraged to strive toward performance at graduated levels of enrichment.
- Collaboration and community will be fostered through partner and small group activities and projects, consistent peer dialogue, opportunities for written expression in math journals, and publication of student work.
- Feedback will be provided through informal dialogue, rubrics, and check-ins.
- Activities will be varied and project based according to student interest to optimize motivation.

**ELL Differentiation:** lesson plans will be delivered to instructor to pre-teach and review vocabulary terms and promote comprehension of central text. Students will have opportunity
to view illustrations to build understanding of unfamiliar terms or events. Students may also review and complete journal entries with guidance and support.

**Gifted and Talented Differentiation:** students will have opportunity to participate in enrichment activities based on individual interest. Project based learning is encouraged through use of technology and the opportunity to publish and share with peers.

**Learning Disabilities Differentiation:** student needs will be met based on need identified on IEP’s and with the help of support staff.

**ASD (Autism Spectrum Disorder) Differentiation:** classroom distractions will be kept at minimal, lighting minimized to create calming environment, stress tools accessible, headphones available to aid with volume of peers or media devices, frequent opportunities for physical action, schedules clearly outlined and followed, help of in class support staff.

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**Close Reading Lesson: Stuck by Oliver Jeffers**

This lesson will occur at the beginning of the unit. It will be framed within the Anticipatory Set.

**Lesson Outline, Day 2**

**Learning Goal:** Teacher will help students clarify meaning of words using imagery and identify examples and non-examples.

**Learning Targets:**
- I can describe the meaning of a word using imagery.
- I can describe the meaning of a word by listing examples and non-examples.

**Text Excerpt:**
“...a lighthouse to knock down the house no longer across the street...a curious whale in the wrong place at the wrong time to knock down the lighthouse...”

Text Dependent Questions:
1) What did you see in your mind when you heard the vocabulary word(s)?
2) What happens when there is a commotion?
3) Where could a commotion happen?
4) How do you feel if you are delighted?
5) What would cause you to not feel delighted?
6) Why could something be called ridiculous?
7) Which is more ridiculous: an elephant sitting on a tree or a bee buzzing in the air? Why?
8) What is an orangutan?
9) Where would an orangutan live?
10) Is an orangutan a pet or wild animal?
11) What other ways could Floyd have solved his problem?
12) Why do you think Floyd did not ask anyone for help?

*Most of the questions can be used to help guide discussion when students are tasked with identifying non-examples, which taps into a higher critical thinking skill set.

Vocabulary:
- commotion
- delighted
- ridiculous
- orangutan

Scaffolds and Extensions:
- **UDL Components:** refer to unit overview for detailed list.
- **ELL Differentiation:** lesson plan will be delivered to instructor to pre-teach and review vocabulary terms and promote comprehension of central text. Students will have opportunity to view illustrations to build understanding of unfamiliar terms or events.
- **Gifted and Talented Differentiation:** students will have opportunity to identify additional vocabulary terms based on a common theme (nouns, adjectives, verbs, etc.) and create their own note catcher or create a project on [www.storybird.com](http://www.storybird.com) to publish and share with peers.
- **Learning Disabilities Differentiation:** student needs will be met based on need identified on IEP’s and with the help of support staff.
- **ASD (Autism Spectrum Disorder) Differentiation:** classroom distractions will be kept at minimal, lighting minimized to create calming environment, stress tools accessible, headphones available to aid with volume of peers or media devices, frequent opportunities for physical action, schedules clearly outlined and followed, help of in class support staff.
Text and Resources:
- Note catcher, pencil, highlighters, scissors, glue, clipboards, math journal, doc cam, Stuck

Assessment:
- Process focused – observation or “kid watching”

Mini-Literacy Lesson: Stuck
1) Write today’s learning targets on the board or on sentence strips as a visual reference for the lesson. Have the class read both learning targets aloud several times.
- I can describe the meaning of a word using imagery.
- I can describe the meaning of a word by listing examples and non-examples.
2) Pass out first graphic organizer – an Oral Language Strategies Note Catcher. *Students will already have experience with using a note catcher prior to this unit lesson.
3) “Today’s lesson will help us study our words, just like we have learned to study numbers. Our note catcher begins with another reading of Stuck. As I read, listen for the vocabulary words listed on your note catcher. When you hear one of the words, use your highlighter to code it. We will return to each word after the reading of the story. This time, you will not see the illustrations. It may help you to close your eyes as I read, to help you visualize the events in the story. Remember, you will need to open your eyes to highlight any words.”
4) Together, read aloud the four vocabulary words on the note catcher. Re-read Stuck, modeling a fluent but expressive pace.
5) Refer to the first vocabulary word listed: commotion. Students will complete the box under Strategy #1: What do you see? Encourage students to draw a picture of what they visualized in the story when they heard the word commotion. Ask: What did you see in your mind when you heard the vocabulary word? Allow 2 – 3 minutes for student illustrations. Repeat with the remainder of the vocabulary words: delighted, ridiculous, orangutan.
6) Pair students with their feedback partner to share illustrations. Model possible conversation starters: I drew a picture of.....because.... or Commotion made me think about.....because..... Allow 4 – 5 minutes for student dialogue.
7) Return together whole group and ask for volunteers to share an example for each vocabulary word using the doc cam. Encourage students to think*pair*share with a neighbor to discuss what they notice about each illustration.
8) Relate activity back to student learning target. “We have just used imagery to help us explain what a word means. Our pictures show that we understand how the word was used in the story.”
9) Refer to Strategy #2 in the note catcher, What is the non-example? In this section, students will identify a non-example to provide further meaning to each vocabulary word. Model this activity together but provide students opportunity to use the teacher phrases or come up with their own. Use the doc cam to record information on the note
catcher whole group. Allow 1 – 2 minutes between each non-example for students to return to their desks to complete their own note catcher.

10) “Next, we are going to identify a non-example for each of our vocabulary words. Let’s start with commotion. I am going to read the page again where we first heard this word and let’s talk about what happened in the story... (a fire engine was passing and heard all the commotion. The firemen stopped to see if they could help at all.)” Discuss what happens when there is a commotion.

11) “If we know what a commotion is, can anyone think about what a commotion is not?” Provide time for a think*pair*share, 1 – 2 minutes. If students are unable to brainstorm any ideas, model a non-example for them. A commotion is not peaceful. A commotion is not calm. A commotion is when everything is NOT in order. Write down at least one phrase in the non-example box. “Not in order”. Repeat with the remaining vocabulary words, re-reading the passage where the word is found, discussing non-examples with a partner, and identifying at least one phrase to record on the note catcher.

12) “Floyd was delighted. He had forgotten all about his kite and put it to use immediately, enjoying the rest of his day very much.” Possible non-examples: disappointed, upset, angry, unhappy.

13) “Cats get stuck in trees all the time, but this was getting ridiculous.” Possible non-examples: serious, makes sense, boring, ordinary.

14) “... an orangutan to knock down the milkman, who surely had somewhere else to be...” Possible non-examples: gorilla, ape, lemur, koala.

15) “Let’s check back with our second learning target. We have now finished giving non-examples to help us describe the meaning of a word.”

16) Students will cut out and glue note catcher into the next entry in their math journals, recording today’s date. This journal entry will be used as a reference in further lessons.

Frontloading/Anticipatory Set:

Text and Resources: Stuck, math journals, pencils, anchor chart, markers, doc cam, PC.

Vocabulary:
- Problem solving
- Graphic map

Formative Assessments:
- Informal – product (math journal entry)

Lesson Outline, Day 1
1) Gather students at the front of the room and read aloud Stuck, by Oliver Jeffers.
2) Write into the Room: return desks and complete the first open-ended journal prompt: *The most important part of problem solving is…….* Allow 3 – 5 minutes for an expressive write. Encourage students to think about Floyd and their own experiences.

*The goal of this activity is to encourage students to explore their attitudes and dispositions about math.*

3) Pair/Share – students locate their feedback friend and share responses. Allow 3 – 4 minutes.

4) Return to the front of the room and prepare an anchor chart. Students can choose to share out their journal responses. Record on chart.

5) Review anchor chart together and identify most important steps in problem solving.

6) Make a Graphic Map to showcase selected ideas.

7) “Let’s take a break in our discussion about what the most important part of problem solving is….to dive a little deeper into the story about Floyd.”

- Preparing for Day 2.
- Graphic maps will be printed for students to cut out and glue into their math journals as a reference.

**Day 2:**

1) Return to central text for mini literacy lesson.
Day 3:

Text and Resources: interactive math journal, pencils, crayons, chart paper or sentence strips, markers, note catchers, magnifying glasses, i-PADs and manila envelopes with the following inside: number line, 10 frame, dot cards, base 10 blocks, pennies, ruler, paper with visual of quick tens *These items will all represent the number 13.

Vocabulary:
- prediction
- notice
- wonder

Formative Assessments: process focused – observation (“kid watching”)

Lesson Outline:
1) Begin “Writing into the Day” with the following journal prompt: I want to become better at math so that I……” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.
2) Provide time for students to share with a neighbor or re-read their journal entry to themselves.
3) Gather students at front of the room in a learning circle to sit in thinking position.
4) “It is time for another mystery box.” From the mystery box (previously made and used in lessons as a frontloading activity) pull out large manila envelopes. They will be numbered #1. Pass envelopes around the circle, encouraging students to make predictions about what is inside. Clarify that each envelope contains the same contents.
5) “Today you will be investigating what is inside these envelopes in order to help you solve a math mystery. You will be working in your detective group to look at and talk about what you find in these envelopes. Using a new note catcher titled DBI Detective Investigation, you will be answering two important questions throughout the day.” Record both questions on chart paper or on sentence strips. (Students have had experience with dialogue and written response with notices and wonders). *What do you notice? *What do you wonder?
6) Display note catcher on doc cam and review with students. Explain that they will only complete the first section under phase 1.
7) “Everyone will need a pencil, note catcher, and magnifying glass. Each group will receive a manila envelope and an i-PAD. Use the magnifying glasses to help you investigate the materials inside and the i-PAD to document anything you think is important to remember. You may use the camera to take pictures. Each person in your group will take at least one photo. When the lights turn off this will be your signal to use your note catchers to record your notices and wonders.”
8) Divide students into 5 heterogeneous groups of 4 students (dependent on class size). Appoint one detective from each group to collect supplies. Allow 10 minutes for exploration time, then another 10 minutes for students to record responses.

9) Turn out lights a second time to signal attention. “Now it is time for Musical Detectives! I will appoint one traveling detective to visit each group. Your mission is to share the photos your group chose to take with the camera app and explain why you thought those materials were important. Talk about what the detectives in your group noticed or wondered about each item. When the lights turn down, traveling detectives will move to the next group. When you return to your group, help each other put away all your supplies back into the manila envelopes for the supply detective to return to me. Then join me up front in our thinking circle.” Allow 15 – 20 minutes for traveling dialogue.

10) Group share – students will share ideas about what they noticed or wondered during the investigation. Record ideas on an anchor chart.

Closure:

11) Students will record predictions in interactive journals based on the following prompt: I predict this mystery is all about________________________________________." Allow for 3 – 4 minutes of an expressive write.

Day 4:

Text and Resources: interactive math journal, pencils, crayons, chart paper or sentence strips, markers, highlighting tape, note catchers, magnifying glasses, i-PADs and manila envelopes with the following inside: stickers, crayons, jar of jewels, marshmallows, mini plastic animals, photos of items (snakes, apples, etc.), *These items will all represent the number 13.

Vocabulary:
- prediction
- notice
- wonder

Formative Assessments: process focused – observation ("kid watching")

Lesson Outline:
1) Display Writing into the Day journal prompt – “It math could be a color, it would be________________ because.......” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.
2) Provide time for students to share with a neighbor or re-read their journal entry to themselves.
3) Gather students up front to sit in a thinking circle. Refer to anchor chart created the previous day with student notices and wonders.
4) “Yesterday we began our math investigation in our detective groups. We completed Phase #1 in the case and are ready to move onto Phase #2. Before we begin, let’s
review our notices and wonders yesterday.” Read aloud together. If students identify any buzz words (students have prior knowledge that buzz words are important words or phrases that help us share our opinion or relay facts about what we have learned) use highlighting tape to mark the words.

5) “You will be working with your same groups from yesterday. Everyone will need their note catcher, pencil, and magnifying glass. Each group will get a new envelope. Remember, when the lights go off, please be ready to record your notices and wonders. Today you may take photos with the i-PADS but we will not play Musical Detectives. When everyone has finished their work, return everything to the envelopes and we will share out our ideas in our listening circle at the front of the room.”

6) Review note catcher with doc cam and provide directions for Phase #2. Repeat previous day routines and procedures.

Closure:

1) Students will record predictions in interactive journals based on the following prompt. “The items in the envelopes are the same because ______________.” Allow for 3 – 4 minutes of an expressive write.
Day 4:

Text and Resources: interactive math journal, pencils, crayons, chart paper or sentence strips, markers, highlighting tape, note catchers, magnifying glasses, i-PADs and manila envelopes with the following inside: cards with various number sentences and expressions that equal 13.

Vocabulary:
- prediction
- notice
- wonder
- equation
- number sentences
- expression
- list

Formative Assessments: process focused – observation (“kid watching”) and product focused – video, note catcher, interactive journal.

Lesson Outline:
2) Display Writing into the Day journal prompt – “When I think of math I think......” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.
3) Provide time for students to share with a neighbor or re-read their journal entry to themselves.
4) Gather students up front to sit in a thinking circle. Refer to anchor chart created the previous day with student notices and wonders. Discuss the relationship between the items found in both envelopes.
5) “Today you and your team will receive the final envelope. After you have taken time to explore each item, you will make a video using the camera app. As a team, come up with the answer to our mystery. You have three clues so far.” Record the clues on the board, chart paper, or sentence strips:
   - The most important part of problem solving is.... (Discuss the journal prompt from day 1 of the investigation).
   - Notices and wonders from envelope #1.
   - Notices and wonders from envelope #2.
6) “Your fourth clue will come from today’s envelope. Remember, complete the note catcher before your team records your video.” Display the note catcher on the doc cam and review the last section, including the summary.
7) Model video starts that could be used to reveal the mystery. Example: Our team has solved the mystery! Everything in the envelope is about…… or Our detectives have closed the case. These envelopes reveal that ………

8) After students have explored contents in envelope, completed their note catchers, made a video on the i-PAD, and returned all materials, resume the thinking position at the front of the room.

9) Display anchor chart and review notices and wonders from the first two envelopes. Add a section for envelope #3. On a separate chart or on the white board, record student predictions about what the mystery had been.

10) Use guiding questions to encourage students to further explain how they drew conclusions.
   - How did the items in the envelope help you make your predictions?
   - How were the items alike in each envelope?
   - How were they different?
   - Why was the order of how you explored the envelopes important?
   - What clues were most helpful?
   - What did our mystery project have to do with math?

Closure:

1) “In your journals, please answer the essential question, ‘What are the steps in problem solving?’ Think about what you wrote on our first day of writing into math, the story about Floyd in Stuck, and our mystery project. You may write in complete sentences or make a list.” Allow 5 minutes for expressive write.
Day 5:

**Text and Resources:** interactive math journal, pencils, crayons, chart paper or sentence strips, markers, scissors, glue, access to media to play you tube video, envelope for each pair containing one double digit number under 20, 4 square note catcher, i-PADS, access to all classroom math manipulatives and resources.

**Vocabulary:**
- Multiple
- Value

**Formative Assessments:** product based (interactive journal entry, 4 square note catcher, i-PAD photos.

**Lesson Outline:**
1) Display Writing into the Day journal prompt – “People who are good at math……” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.
2) Provide time for students to share with a neighbor or re-read their journal entry to themselves.
3) Meet in a thinking circle at the front of the room. Display the essential questions on sentence strips, anchor chart, or record on the board. There will be two – the unit EQ and the EQ from the DBI project.
   - What are the steps in problem solving?
   - Why is it important to know the value of a number?
4) “This week we have explored what the steps are in problem solving. Let’s discuss how our activity can also answer our unit EQ.” Allow 5 minutes for student response and/or answers.
5) “This week we learned there are multiple ways to represent the number 13. We know that the value of a number is important.”
6) Show the following video on YouTube: Numbers in the Teens (They Start with a 1).
7) Students will think*pair*share notices and wonders about the video.
8) “In our DBI this week, we learned there are multiple ways to represent the number 13. What do you think would happen if we completed the same activity with a new number.” 3 – 4 minutes for student discussion.
9) “For your next activity, you and a partner will receive a small envelope containing your mystery number. Once you have written your number in the 4 square note catcher, you may use any materials in class to represent your number. Think back to our investigation this week and what tools were in your envelope, or identify something
new in the classroom that you would like to use. You and your partner will need four different ways to show your number. You will use the camera to document your work. Write your names on the post-it then stick it on the i-PAD before you return them, so I can check your photos.”

10) Allow 30 minutes for this activity. Students will glue their note catcher into interactive journals when complete. i-PADS will be turned in to provide evidence of student work.

Day 6:

Text and Resources: interactive math journal, pencils, crayons, chart paper or sentence strips, markers, vocabulary note catcher, doc cam, story template, colored sheets of construction paper, glue.

Vocabulary:
- fetched
- long distance
- exhausted
- opinion

Formative Assessments: product focused - vocabulary note catcher (this is not an assessment to be taken for a grade, but rather, a sample of student work.

Lesson Outline: Literacy Mini-Lesson follow up and assessment
1) Display Writing into the Day journal prompt – “When I hear someone say math is fun I…….” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.
2) Provide time for students to share with a neighbor or re-read their journal entry to themselves.
3) Gather at the front of the room for another reading of Stuck.
4) “Today we will return to our central text in order to study three new vocabulary words. You will complete a note catcher on your own to help you describe the meaning of each word.” Display and review note catcher using the doc cam.
5) The entire story will not be read; students will listen for each vocabulary word on the pages that will be shared. Read each excerpt twice. Students will return to their desk to complete the illustration and non-example sections independently. Allow 4 – 5 minutes per. word before moving onto the next reading.
6) fetched – “In order to known down his other shoe, Floyd fetched Mitch…..Floyd fetched a ladder.”
7) long distance – “…a long distance truck to known down the rhinoceros...”
8) exhausted – “That night, Floyd fell asleep exhausted.”
9) Enrichment extension, if needed: encourage students to identify whether or not each word is a noun, verb, adjective; write each word in a sentence, or describe examples for each.
10) Note catchers will be collected but will not be used as a formal assessment, but rather, a sample of student work (portfolio). This was a practice opportunity for students. Further application of skills will be needed.

11) Next, students will gather up front to receive directions. For the second activity, they will complete the story prompt on the template provided: *To get his shoe unstuck, I think that Floyd should have _______________________ because _____________________.* Review what an opinion is through a quick pair*share and share outs whole group.

12) Provide 7 – 10 minutes for students to complete the sentence frame and draw an illustration. They will glue their papers onto construction paper to be made into a class book titled, *How Should Floyd Solve His Problem?*

Day 7:

Text and Resources: interactive math journal, pencils, crayons, chart paper or sentence strips, markers, glue, letter size envelopes containing a story problem that has been cut into pieces.

Vocabulary:

- more
- tens
- ones
- represent

Formative Assessments: Lesson Outline:

1) Display YouTube video as an opener – kids will love to sing along! This reinforces the concept that numbers in the teens begin with a 1. *Numbers in the Teens (They Start with a One).*

2) Display Writing into the Day journal prompt – “I use math in my life. It helps me to…….” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.

3) Provide time for students to share with a neighbor or re-read their journal entry to themselves.

4) “Today you have another mystery to solve. You will be working on new detective teams of 4. Each team member will need their interactive notebook, pencil, and a magnifying glass. Each group will receive an envelope, construction paper, chart paper, scissors, glue, and markers. Your first job is to explore what is inside the envelopes. Then decide how to piece it back together. Take turns reading out loud as a team what you have created, then show me your work. The next step will be to glue your work at the top of a one of the pieces of chart paper.” Allow 10 – 15 minutes for the first session.

5) Each team will need to read the parts of the math story problem that have been cut apart. They will need to decide how to correctly put the story back in order. After the first session, meet back up front in a thinking circle.

6) “Next, you and your team will demonstrate three different ways to solve your problem. Work together and show your work on the chart paper. You may use any of the tools
around the room to help you.” This will complete the second session. Allow 15 minutes for student work, then return to the thinking circle for the last session directions.

7) “Finally, you have arrived at the last step in your investigation.” Display the E.Q: **What are the steps in problem solving?** Students will answer this E.Q and show their work using the second sheet of chart paper. Students will not be led how to answer the question. They can refer to how their team pieced the story problem back together or how they chose to solve the problem itself. They should be encouraged to think about the question in multiple ways. Allow 10 minutes for student work.

8) Display anchor charts around the classroom and conduct a gallery walk, meeting at the front of the room to share notices and wonders about each team’s work.

**Closure:**

1) Students will complete the following prompt in their interactive journal. **“What I learned about problem solving today is...............”**
Day 8:

Text and Resources: interactive math journal, pencils, crayons, chart paper or sentence strips, markers, media to play video, letter size envelopes containing a story problem that has been cut into pieces, scissors, glue.

Vocabulary:
- value
- digit
- ones
- tens
- equation
- answer

Guiding Questions:
1) How does the learning value of a number help us count?
2) How does the value of a number help us read and write numbers?
3) How does the value of a number help us solve equations?
4) In what ways can you have fun in math as you learn about the value of a number?
5) What is something new you learned from Hamburger today? If you feel you did not learn anything new, how did he explain something in a different way?

Formative Assessments: process focused – observation (kid watching), product based (interactive journal), and performance based – show me your work.

Lesson Outline:
1) Display EQ: Why is it important to know the value of a number?
2) Play the following video clip from YouTube as an opener: Place Value by Chasulee. *This is an opportunity for students to strengthen critical thinking skills and reflect on their own experiences in math.
6) Stop 18 seconds in and ask students first three guiding questions. Students will think*pair*share.
7) Stop 30 seconds in and ask students the next guiding question. Continue think*pair*share.
8) Stop 48 seconds in and ask the last guiding question and continue sharing.
3) Display Writing into the Day journal prompt – “Describe your feeling about when you are asked to show your work to others or explain a problem...” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.
4) Provide time for students to share with a neighbor or re-read their journal entry to themselves.
5) “Today you will complete a new investigation on your own. You will show me your work and explain how you solved your mystery problem. “ *Students who complete work early will have time to explain their work; other journal entries will be shared 1:1 throughout the week.
6) Each student will receive one envelope with a story problem cut into pieces. They will piece it back together in their journal and show 2 different ways to solve the problem. Work must be written or illustrated in the journal but students may use any tool(s) in the classroom for additional help. *There will be three types of story problems to meet the differentiating skill level of each student. A rubric will be completed for both the interactive journal and student explanation.
7) Possible consideration – showing students the rubric prior to the activity to set the level of expectation. Highlight buzz words: equation, answer, show, complete, etc. to indicate what parts should be included in the interactive journal entries.
Day 9:

**Text and Resources:** interactive math journal, pencils, crayons, chart paper or sentence strips, markers, construction paper, story template, glue, scissors, doc cam, i-PAD or flip cam.

**Vocabulary:**
- value
- important
- imagery

**Formative Assessments:** process focused – observation (kid watching)

**Lesson Outline:**

1) Display Writing into the Day journal prompt – “Describe a discovery you’ve made about math...” Allow 5 minutes for expressive write. Students may illustrate in crayon when finished.

2) Provide time for students to share with a neighbor or re-read their journal entry to themselves.

3) Writing into the Day journal entries may be completed in the interactive journal or in a separate notebook. One consideration would be to keep the writing going throughout the year in math so that each student has a portfolio at the end of the year, documenting their dispositions and feelings about math.

4) Gather at in a thinking circle and read The Important Book.

5) Display EQ: Why is it important to know the value of a number?

6) “Today you will write your own page for our book titled, The Important Thing About Numbers. This week we have learned that every number has a story to tell. You may choose any number between 10 and 20. Think about what it is that makes this number important. You can refer back to our essential question or any of the activities we have done this week. Complete the story template, then draw your illustration in crayon.”

7) Display the story template and model an example using a number higher than 20. Model word use that will create imagery for the reader. Example: adjectives and verbs.

8) Students will glue story template onto construction paper when finished. Each student will share their work prior to “publication”. They will have the opportunity to read their page (use a flip cam or i-PAD camera app) aloud to create a slideshow publication. Their video can be played for the other first grade classes.
9) Student pages will be bound together to create a class book.