Diagnostic Tasks for Kindergarten Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Task 1: Counting Principles

Do

Part (A): Show student(s) a scattered collection of **8 items**.



Observe

- Does the student include each item only once?
- Does the student say the number names in the right order?
- Does the student move the items or keep track of their starting point?

Ask

"Can you tell me how many are here?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Kindergarten Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Do

Part (B): After the student(s) has completed the count, notice whether they emphasize the **last number** when they count a part of the set.



Observe

- Does the student recount from the start?
- Does the student repeat the last number word?
- Does the student look confused?

Ask

"How many _____ (e.g. blue or green gems) are there?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Kindergarten Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Do

Part (C): Place **8 items** in a line.



Observe

- Does the student recount from the start?
- Does the student restate the number without counting?
- Does the student get the same number as they did with the first count?
- Does the student know that they should have the same number for both counts?

Ask

"How many _____ are there?"

********If the student finishes the count with a different number from the original count*:

"When you counted them before you said there were ____ and now you say there are _____."

So, are there [the first number the student said] or are there [the second number the student said]?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Kindergarten Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Do

Part (D): Start with a new collection of **10 items**. Place them in a line and ask the student to count the items starting from the middle.



Observe

- Does the student count from the middle item?
- Does the student count from the middle (moving from left to right) to the end of the row, omitting the first few items in the row?

Ask

"How many _____ do we have? When you count the ___, begin with this one (pointing to the middle item). It is number one."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Kindergarten Number Sense

Key Concepts: Ways to make 5 (perceptual and conceptual subitizing, comparing quantities)

*Click **here** for more information.*

Subitizing

Do

Task 1: Place **2 blocks** in a container.



Task 2: Add blocks **or** remove blocks to show the following numbers: **2, 3, 1, 5, 4**, and **6**.



Observe

- Remember to give the student only a brief look so that they are forced to use subitizing (counting at a glance) rather than counting.

Ask

"How many blocks are there?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Kindergarten Number Sense

Key Concepts: ways to make 5 (conservation and perceptual and conceptual subitizing)

*Click **here** for more information.*

Hide the Jelly Beans

Do

Task 1: Start with a small number of objects (e.g. 5-6) and count. Ask the student to close their eyes as you hide some of the jellybeans. Have the student tell you how many jellybeans are hidden.



Observe

- See what students know about the numbers involved and what strategies they use to calculate how many are hidden.

Ask

"How many _____ are there under the bucket?"

****Increase or decrease the number of objects in the collection depending on the numbers the students are familiar with.****

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Task 1: Counting Principles

Do

Part (A): Show student(s) a scattered collection of **8 items**.



Observe

- Does the student include each item only once?
- Does the student say the number names in the right order?
- Does the student move the items or keep track of their starting point?

Ask

"Can you tell me how many are here?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Do

Part (B): After the student(s) has completed the count, notice whether they emphasize the **last number** when they count a part of the set.



Observe

- Does the student recount from the start?
- Does the student repeat the last number word?
- Does the student look confused?

Ask

"How many _____ (e.g. blue or green gems) are there?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Do

Part (C): Place **8 items** in a line.



Observe

- Does the student recount from the start?
- Does the student restate the number without counting?
- Does the student get the same number as they did with the first count?
- Does the student know that they should have the same number for both counts?

Ask

"How many _____ are there?"

********If the student finishes the count with a different number from the original count*:

"When you counted them before you said there were ____ and now you say there are _____."

So, are there [the first number the student said] or are there [the second number the student said]?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: 1:1 correspondence, conservation, cardinality, stable order, sequencing 1-10, subitizing

*Click **here** for more information.*

Do

Part (D): Start with a new collection of **10 items**. Place them in a line and ask the student to count the items starting from the middle.



Observe

- Does the student count from the middle item?
- Does the student count from the middle (moving from left to right) to the end of the row, omitting the first few items in the row?

Ask

"How many _____ do we have? When you count the ___, begin with this one (pointing to the middle item). It is number one."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: Ways to make 5 (perceptual and conceptual subitizing, comparing quantities)

*Click **here** for more information.*

Skip Counting

Do

Task 1: Give the student 15 small items.



Task 2: If the student counts by 1's ask them to skip count by 2's.

Observe

- If the student counts by ones, go on to step 2.
- Notice how the student keeps track of the "twos" and what they do when they reach the remaining single item.
- At the end of the count, notice if the student calls the single item the next number in the "twos" sequence. For example, does the student point and say "12,14,16"? or "12,14,15"?

Ask

"How many _____ have I given you? How did you decide that?"

"Will you get the same answer if you count by twos? Count by twos to find out."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: Ways to make 5 (perceptual and conceptual subitizing, comparing quantities)

*Click **here** for more information.*

Do

Task 3: Give the student more than 50 small items.



Observe

- Watch to see if the student begins and then continues to count the whole collection by ones.

Ask

"How many _____ do you think are there? How could you know exactly how many are there?"

If they count the collection by ones, ask: "how many_____ will there be if you count by 5's?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: Ways to make 5 (perceptual and conceptual subitizing, comparing quantities)

*Click **here** for more information.*

Subitizing

Do

Task 1: Place **2 blocks** in a container.



Task 2: Add blocks **or** remove blocks to show the following numbers: **2, 3, 1, 5, 4**, and **6**.



Observe

- Remember to give the student only a brief look so that they are forced to use subitizing (counting at a glance) rather than counting.

Ask

"How many blocks are there?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 1 Number Sense

Key Concepts: ways to make 5 (conservation and perceptual and conceptual subitizing)

*Click **here** for more information.*

Hide the Jelly Beans

Do

Task 1: Start with a small number of objects (e.g. 5-6) and count. Ask the student to close their eyes as you hide some of the jellybeans. Have the student tell you how many jellybeans are hidden.



Observe

- See what students know about the numbers involved and what strategies they use to calculate how many are hidden.

Ask

"How many _____ are there under the bucket?"

****Increase or decrease the number of objects in the collection depending on the numbers the students are familiar with.****

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 2 Number Sense

Key Concepts: Number concepts to 100, skip counting, comparing and ordering, composing and decomposing, addition and subtraction.

*Click **here** for more information.*

Task 1: Skip Counting

Do

Part (A): Give the student(s) **15** small items



Observe

- If the student counts to 14 accurately by twos, then adds one more, stop the task here.
- If the student counts by ones, go on to **part (b)**.

Ask

"How many ____ have I given you?"

"How did you decide that?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 2 Number Sense

Key Concepts: Number concepts to 100, skip counting, comparing and ordering, composing and decomposing, addition and subtraction.

*Click **here** for more information.*

Do

Part (B): Give the student the same collection of **15** small items to count and have them count again.



Observe

- Notice how the student keeps track of the "twos" and what they do when they reach the remaining single item.
- At the end of the count, notice if the student calls the single item the next number in the "twos" sequence. Even though there is only one there. For example, does the student point and say "12,14,16"? or "12,14,15"?

Ask

"Will you get the same answer if you count by twos? Count by twos to find out."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 2 Number Sense

Key Concepts: Number concepts to 100, skip counting, comparing and ordering, composing and decomposing, addition and subtraction.

*Click **here** for more information.*

Do

Part (C): Give the student(s) a collection of 50-100 items.



Observe

- Watch to see if the student begins and then continues to count the whole collection by ones.

Ask

"How many _____ do you think are there? How could you know exactly how many are there?"

*****If they count the collection by ones, ask: "how many _____ will there be if you count by 5's?"***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 2 Number Sense

Key Concepts: Number concepts to 100, skip counting, comparing and ordering, composing and decomposing, addition and subtraction.

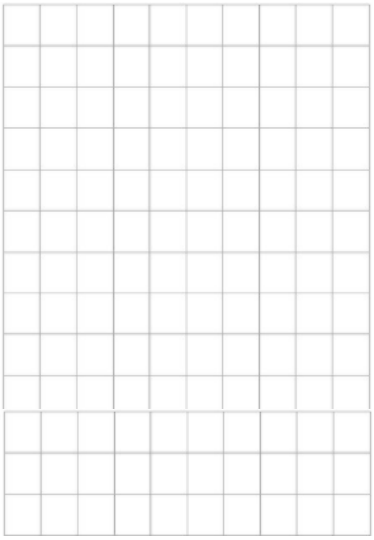
*Click **here** for more information.*

Task 2: Up and Over 100

Do

Task 1: Provide each student with a blank 10 X 20 grid.

Up to and Over 100



Observe

- Whether the student knows the pattern in the way we say numbers up to and over 100.
- Whether the student generally experiences difficulty when working with numbers.

Ask

Ask students to fill in the chart, counting by 1's, beginning at 1.

If the student writes an incorrect number, Ask: *"Explain your pattern to me."***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 2 Number Sense

Key Concepts: Number concepts to 100, skip counting, comparing and ordering, composing and decomposing, addition and subtraction.

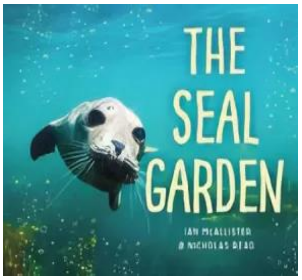
*Click **here** for more information.*

Animals

Do

Task 1: Read a book about groups of animals (e.g. harbor seals*)*. Using the same number of animals as appeared in the story, ask students to show all the different ways they could put ____ (e.g. **12** harbor seals) into **two places** (e.g. in the kelp garden or on the rocks).





Observe

- Does the student use numbers alone, moving "one" from this number to that number?
- Does the student draw lines, dots, or other symbols and count, and then record their partitioning?
- Does the student use materials to count and then record their partitioning?

Ask

"How many animals were in the story? Show me all the ways you can put ___ into ___ groups."

*****At first limit the student to paper and pen. If the student struggles, use manipulatives to help*****

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 2 Number Sense

Key Concepts: : Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

*Click **here** for more information.*

Change Tasks 1&2 (Line Masters)

Do

Task 1: Have students write the numbers and signs (+,-,x,÷) they would need to solve each problem. It is not expected that students solve each problem. We are checking to see if they understand the inverse relationship between addition and subtraction when solving word problems. If they can successfully complete Change Task 1, try Chage Task 2.

Observe

- . what students are thinking as they write their equations and if you are able, ask them to clarify how they know which number operation to use.

Ask

"Write the numbers to represent the following number stories/problems."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 3 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

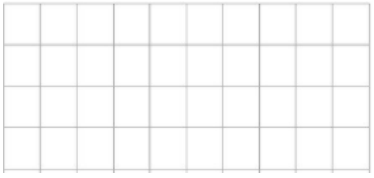
*Click **here** for more information.*

Task 1: Numbers to 1000

Do

Task 1: Provide each student with a blank grid. **(see line master)**

Up to and Through the Hundreds



Observe

- If the student counts to 14 accurately by twos, then adds one more, stop the task here.
- If the student counts by ones, go on to **part (b)**.

Ask

Ask students to fill it in, counting by 1's, beginning at the prefilled number (91, or 491) and completing the grid to the end of the boxes.

If the student writes an incorrect number. ask: *"Explain your pattern to me."***

Listen to what the student actually thinks the pattern is.

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 3 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

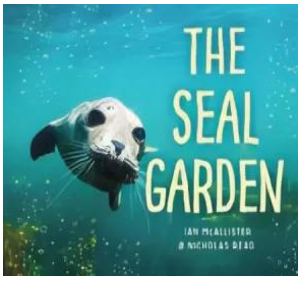
*Click **here** for more information.*

Task 2: Animals

Do

Task 1: Read a book about groups of animals (e.g. harbor seals*)*. Using the same number of animals as appeared in the story, ask students to show all the different ways they could put ____ (e.g. **12** harbor seals) into **two places** (e.g. in the kelp garden or on the rocks).





Observe

- Does the student use numbers alone, moving "one" from this number to that number**?**
- Does the student draw lines, dots, or other symbols and count, and then record their partitioning**?**
- Does the student use materials to count and then record their partitioning**?**

Ask

"How many animals were in the story? Show me all the ways you can put ___ into ___ groups."

*****At first limit the student to paper and pen. If the student struggles, use manipulatives to help*****

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 3 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

*Click **here** for more information.*

Task 3: How Did You Do It?

Do

Task 1: Students will practice a variety of computational problems on their page and solve it mentally.

** ***This lesson needs to be modelled several times with simple computation examples to give students practice in thinking about and recording their mental strategies.*** **

Observe

- Listen to and record student responses on the board including counting strategies that students mention.
- Reflect on what they are thinking rather than what you *assume* they are thinking.
- If they can't solve the problem mentally, ask them to work it out on paper in a way that makes sense to them, OR have them use materials to solve if they need to.

Ask

Beginner:

Explain your thinking.
62-23
26+37

Advanced:

Your grandpa is **84** but you only have **67** candles for his birthday cake. How many more candles do you need?

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 3 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

*Click **here** for more information.*

Task 4: Dinosaurs

Do

Task 1: Talk about the number of dinosaurs there are on the page. Students write how many **(35)** in the space provided.



Observe

- Examine student's understanding of the meaning of the individual digits in a two-digit number

Ask

Write the number that the student says and point to the 5 and say: ***"Use a green pencil and put a circle around what this part of the number means in the set of dinosaurs."*** Then point to the 3 and say:

"Use a red pencil and put a circle around what this part of the number means in the set of dinosaurs."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 3 Number Sense

Key Concepts: : Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

*Click **here** for more information.*

Change Tasks 1&2 (Line Masters)

Do

Task 1: Have students write the numbers and signs (+,-,x,÷) they would need to solve each problem. It is not expected that students solve each problem. We are checking to see if they understand the inverse relationship between addition and subtraction when solving word problems. If they can successfully complete Change Task 1, try Chage Task 2.

Observe

- . what students are thinking as they write their equations and if you are able, ask them to clarify how they know which number operation to use.

Ask

"Write the numbers to represent the following number stories/problems."

*****You may change any of the scenarios or names in the tasks to fit your specific situation"***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 4 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

Task 3: How Did You Do It?

Do

Task 1: Students will practice a variety of computational problems on their page and solve it mentally.

** ***This lesson needs to be modelled several times with simple computation examples to give students practice in thinking about and recording their mental strategies.*** **

Observe

- Listen to and record student responses on the board including counting strategies that students mention.
- Reflect on what they are thinking rather than what you *assume* they are thinking.
- If they can't solve the problem mentally, ask them to work it out on paper in a way that makes sense to them, OR have them use materials to solve if they need to.

Ask

Beginner:

Explain your thinking.
62-23
26+37

Advanced:

Your grandpa is **84** but you only have **67** candles for his birthday cake. How many more candles do you need?

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 4 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

Task 4: Dinosaurs

Do

Task 1: Talk about the number of dinosaurs there are on the page. Students write how many **(35)** in the space provided.



Observe

- Examine student's understanding of the meaning of the individual digits in a two-digit number

Ask

Write the number that the student says and point to the 5 and say: ***"Use a green pencil and put a circle around what this part of the number means in the set of dinosaurs."*** Then point to the 3 and say:

"Use a red pencil and put a circle around what this part of the number means in the set of dinosaurs."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 4 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000..

*Click **here** for more information.*

52 Candies (Set A)

Do

Task 1: Provide each student with a copy of the **line master** for this task.

Read the introductory sentence on the line master: ***"Candies can be bought as single candies or in rolls of ten as shown here."***

"How many candies are represented altogether?" Discuss until you come to an agreement **(52).**

Observe

- Talk with students about their answers until all students agree that there are **52** candies. Observe students as they record ***52*** on their pages.

Ask

Write **52** on the board for all students to view. Do not say the words: "five", "fifty" or "two". Point to the **2** and say: "***Use a blue pen to colour in what this part of the 52 means in the drawing."***

Point to the **5** and say: ***"Use a red pen to colour in what this part of the 52 means in the drawing.***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 4 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

43 Candies (Set B)

Do

Task 1: Provide each student with a copy of the line master for this task.

Read the introductory sentence on the line master: ***"Candies can be bought as single candies or in rolls of ten as shown here."***

"How many candies are represented altogether?" Discuss until you come to an agreement (43).

Observe

- Talk with students about their answers until all students agree that there are **43** candies. Observe students as they record **43** on their pages.

Ask

Write **43** on the board for all students to view. Do not say the words: "four", "forty" or "three". Point to the **3** and say: "***Use a blue pen to colour in what this part of the 43 means in the drawing."***

Point to the **4** and say: ***"Use a red pen to colour in what this part of the 43 means in the drawing."***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 4 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

116 Candies (Set C)

Do

Task 1: Provide each student with a copy of the line master for this task.

Read the introductory sentence on the line master: ***"Candies can be bought as single candies, in rolls of ten or in boxes of 100 as shown here."***

Observe

- Which strategies do students use to complete the task independently?

Ask

"How many different ways could you make up an order for 116 candies?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 4 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

Decimals

Do	Observe
Task 1: Choose line master **set A-D** and **set E-F** and either have students complete each task in isolation or as a full set.	• The level of difficulty for each task will vary from student to student. Select the tasks you think they will be able to complete and ask them to explain their thinking behind each task if it is not clear from their written explanation.

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 4 Number Sense

Key Concepts: : Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

*Click **here** for more information.*

Change Tasks 1&2 (Line Masters)

Do

Task 1: Have students write the numbers and signs (+,-,x,÷) they would need to solve each problem. It is not expected that students solve each problem. We are checking to see if they understand the inverse relationship between addition and subtraction when solving word problems. If they can successfully complete Change Task 1, try Chage Task 2.

Observe

- . what students are thinking as they write their equations and if you are able, ask them to clarify how they know which number operation to use.

Ask

"Write the numbers to represent the following number stories/problems."

*****You may change any of the scenarios or names in the tasks to fit your specific situation"***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 5 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

Task 1: How Did You Do It?

Do

Task 1: Students will practice a variety of computational problems on their page and solve it mentally.

** ***This lesson needs to be modelled several times with simple computation examples to give students practice in thinking about and recording their mental strategies.*** **

Observe

- Listen to and record student responses on the board including counting strategies that students mention.
- Reflect on what they are thinking rather than what you *assume* they are thinking.
- If they can't solve the problem mentally, ask them to work it out on paper in a way that makes sense to them, OR have them use materials to solve if they need to.

Ask

Beginner:

Explain your thinking.
62-23
26+37

Advanced:

Your grandpa is **84** but you only have **67** candles for his birthday cake. How many more candles do you need?

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 5 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

Task 2: Dinosaurs

Do

Task 1: Talk about the number of dinosaurs there are on the page. Students write how many **(35)** in the space provided.



Observe

- Examine student's understanding of the meaning of the individual digits in a two-digit number

Ask

Write the number that the student says and point to the 5 and say: ***"Use a green pencil and put a circle around what this part of the number means in the set of dinosaurs."*** Then point to the 3 and say:

"Use a red pencil and put a circle around what this part of the number means in the set of dinosaurs."

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 5 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000..

*Click **here** for more information.*

Task 3 (Set A): 52 Candies

Do

Task 1: Provide each student with a copy of the **line master** for this task.

Read the introductory sentence on the line master: ***"Candies can be bought as single candies or in rolls of ten as shown here."***

"How many candies are represented altogether?" Discuss until you come to an agreement **(52).**

Observe

- Talk with students about their answers until all students agree that there are **52** candies. Observe students as they record ***52*** on their pages.

Ask

Write **52** on the board for all students to view. Do not say the words: "five", "fifty" or "two". Point to the **2** and say: "***Use a blue pen to colour in what this part of the 52 means in the drawing."***

Point to the ***5*** and say: ***"Use a red pen to colour in what this part of the 52 means in the drawing.***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 5 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

Task 3 (Set B):43 Candies

Do

Task 1: Provide each student with a copy of the line master for this task.

Read the introductory sentence on the line master: ***"Candies can be bought as single candies or in rolls of ten as shown here."***

"How many candies are represented altogether?" Discuss until you come to an agreement (43).

Observe

- Talk with students about their answers until all students agree that there are **43** candies. Observe students as they record **43** on their pages.

Ask

Write **43** on the board for all students to view. Do not say the words: "four", "forty" or "three". Point to the **3** and say: "***Use a blue pen to colour in what this part of the 43 means in the drawing."***

Point to the **4** and say: ***"Use a red pen to colour in what this part of the 43 means in the drawing."***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 5 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information*.

Task 3 (Set C) 116 Candies

Do

Task 1: Provide each student with a copy of the line master for this task.

Read the introductory sentence on the line master: ***"Candies can be bought as single candies, in rolls of ten or in boxes of 100 as shown here."***

Observe

- Which strategies do students use to complete the task independently?

Ask

"How many different ways could you make up an order for 116 candies?"

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 5 Number Sense

Key Concepts: Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction to 10,000.

*Click **here** for more information.*

Task 4: Decimals

Do	Observe
Task 1: Choose line master **set A-D** and **set E-F** and either have students complete each task in isolation or as a full set.	• The level of difficulty for each task will vary from student to student. Select the tasks you think they will be able to complete and ask them to explain their thinking behind each task if it is not clear from their written explanation.

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.

Diagnostic Tasks for Grade 5 Number Sense

Key Concepts: : Number concepts to 1000, comparing and ordering, place value, mental math strategies, addition and subtraction.

*Click **here** for more information.*

Change Tasks 1&2 (Line Masters)

Do

Task 1: Have students write the numbers and signs (+,-,x,÷) they would need to solve each problem. It is not expected that students solve each problem. We are checking to see if they understand the inverse relationship between addition and subtraction when solving word problems. If they can successfully complete Change Task 1, try Chage Task 2.

Observe

- . what students are thinking as they write their equations and if you are able, ask them to clarify how they know which number operation to use.

Ask

"Write the numbers to represent the following number stories/problems."

*****You may change any of the scenarios or names in the tasks to fit your specific situation"***

Diagnostic Tasks adapted from First Steps in Mathematics: Number Course Book, 2013.