



3

Grade level
Grade 3



GRADE 3



DIAGNOSTIC ASSESSMENT






TEACHER RESOURCE

EXCERPT

Assessment questions
or tasks are provided
for all 5 strands



Kelly Dixon

-  **Number Sense and Numeration**
-  **Measurement**
-  **Geometry and Spatial Sense**
-  **Patterning and Algebra**
-  **Data Management and Probability**






**DIAGNOSTIC ASSESSMENT
TEACHER RESOURCE**

QUICKCHECK MATH ASSESSMENT TEACHER AND STUDENT RESOURCES

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■ Kindergarten Ongoing ATR Grade Package	404 1109	978-2-7615-0459-1
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■ Diagnostic and Ongoing ATR Grade 2 Package	404 0770	978-2-7615-0448-5
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Assessment Teacher Resources for the 4 levels



The following packages are available for those who have already purchased an Instructional Student Resource Grade Package (books and cases).

Teacher and Student ATR Grade Add-On Package	Product Number	ISBN
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Additional Resources

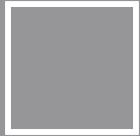



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GRADE 3



3

Grade level
Grade 3



DIAGNOSTIC ASSESSMENT

TEACHER RESOURCE

Assessment questions
or tasks are provided
for all 5 strands



Kelly Dixon

- Number Sense and Numeration
- Measurement
- Geometry and Spatial Sense
- Patterning and Algebra
- Data Management and Probability



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As teachers, we want each of our students to **get** what we are teaching. Often, our hope is to have students **get there** as quickly and as best as they can. Although the goal of achieving curriculum expectations is common for all students, the starting points and routes in reaching this goal differ widely. In our work to enable students to achieve the common goal, it is important to be explicit in our assessment and instruction.

How do we do this? We need to assess our students at the beginning and throughout the learning cycle so we can provide them with ongoing, specific feedback and guidance for growth. Some of the most effective ways to do this with young children are in individual or small group assessment contexts, and through observations and teacher-student conferences.

This *QUICKCHECK Math Diagnostic Assessment Teacher Resource* provides *diagnostic* assessment activities for all five strands of the mathematics curriculum. It offers guidance and structure in an easy-to-use format for student-teacher assessment conferences, either with individuals or small groups of students. This Assessment Resource provides a variety of opportunities for students to demonstrate their learning. Every assessment activity uses open questions and tasks that allow for a range of student responses and that reveal student strategies and thinking. *What to Look For* sections help make connections between assessment observations and curriculum expectations. These connections are particularly useful when providing students and parents with specific feedback on growth and on next steps.

The format of the *QUICKCHECK Math Diagnostic Assessment Teacher Resource* is open and flexible. There is no need to do all the assessment activities in each strand section. We have provided a number of choices for activities that assess similar concepts and skills; it is entirely your decision as to which activities you choose to use to assess your students. You decide how often you need to assess your students and whether or not you will assess them individually or in small groups. *Student Observation Sheets* for each activity are offered as an option for recording your assessment observations. These reproducible sheets are found at the end of each section when required.

We are indebted to the teachers of the Toronto District School Board who piloted these Assessment Resources and whose feedback was essential to the development of their final forms.


Kelly Dixon

Author's word



QUICKCHECK MATH DIAGNOSTIC ASSESSMENT TEACHER RESOURCE

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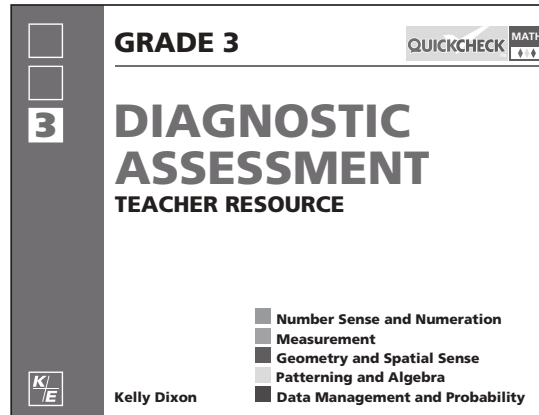
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GATHER THE FOLLOWING FOR YOUR ASSESSMENT

Assessment Teacher Resource


- Choose an assessment activity from any of the math strand sections contained



Gather the following before you begin your assessment:

1. Assessment Teacher Resource
2. Select the activity in the Student Resource
3. Manipulatives and *Templates
4. Diagnostic Student Observation Sheets

*Reproducible templates provided



Instructional Student Resources Packages

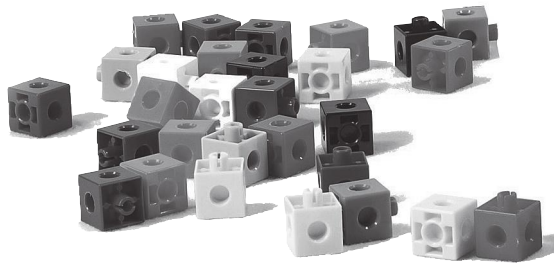
- Select the activity in the Student Resource that corresponds to the assessment activity you chose from the *Diagnostic Assessment Teacher Resource*.





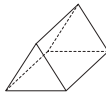


+ Manipulatives and Templates

- ✓ Gather the recommended manipulatives and templates* suggested in the assessment activity.



3-D FIGURE CHART TEMPLATE: QUICKCHECK MATH

Three-Dimensional Figure	Number of Vertices	Number of Edges
		
		
		

The more vertices a 3-D figure has _____

* Templates can be found at the end of a strand section where required. See pages 25, 26, 56, 74, and 98.

+ Diagnostic Student Observation Sheets

- ✓ Use your own method for recording your observations or photocopy the corresponding Student Observation Sheet found at the end of each strand section.

GRADE 3 DIAGNOSTIC STUDENT OBSERVATION SHEET NUMBER SENSE AND NUMERATION QUICKCHECK MATH

Name: _____ Date: _____

3 Compare each number line representation to its corresponding ten frame or base ten representation.

Check Point #1
Assessment Focus: This activity assesses the ability to compare two number lines and determine if they are equivalent. The student is asked to compare two number lines and determine if they are equivalent. The student is asked to compare two number lines and determine if they are equivalent.

Materials Needed: Base ten blocks, a ten frame, and a number line. The student is asked to compare two number lines and determine if they are equivalent. The student is asked to compare two number lines and determine if they are equivalent.

Student Knows	Next Steps for Learning
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Other Questions I Have About the Student's Learning

Here are some examples of questions you can ask students to probe for their mathematical thinking and understanding:

"How do you know _____? Show me/tell me."
 "What is the same and what is different about _____ and _____?"
 "Do you think that...?"
 "What if...?"



QUICKCHECK MATH DIAGNOSTIC ASSESSMENT TEACHER RESOURCE IN THREE EASY STEPS

How to use the
Diagnostic Assessment
Teacher Resource



1. Assessment activities are organized by strand and are designed to be used with individual or small groups of students. The **Check Point assessment activities** in this book have been designed for diagnostic assessment and are appropriate for use **prior to** a cycle of learning.
2. Use any of the **Check Point assessment activities** depending on your purpose and the needs of your students. The *What to Look For* section helps you discover what your students know and what they need to learn. The *What to Look For* section focuses on student thinking and strategies. If you need a system for recording your assessment observations, copy the Student Observation Sheet that corresponds to the assessment activity you have selected. Student Observation Sheets for each activity can be found at the end of each strand section.
3. Prior to using a **Check Point assessment activities**, gather the suggested manipulatives and have students complete the corresponding activity in their *QUICKCHECK Math Student Resource*.

The responses that you observe from students through these assessment activities will help you:

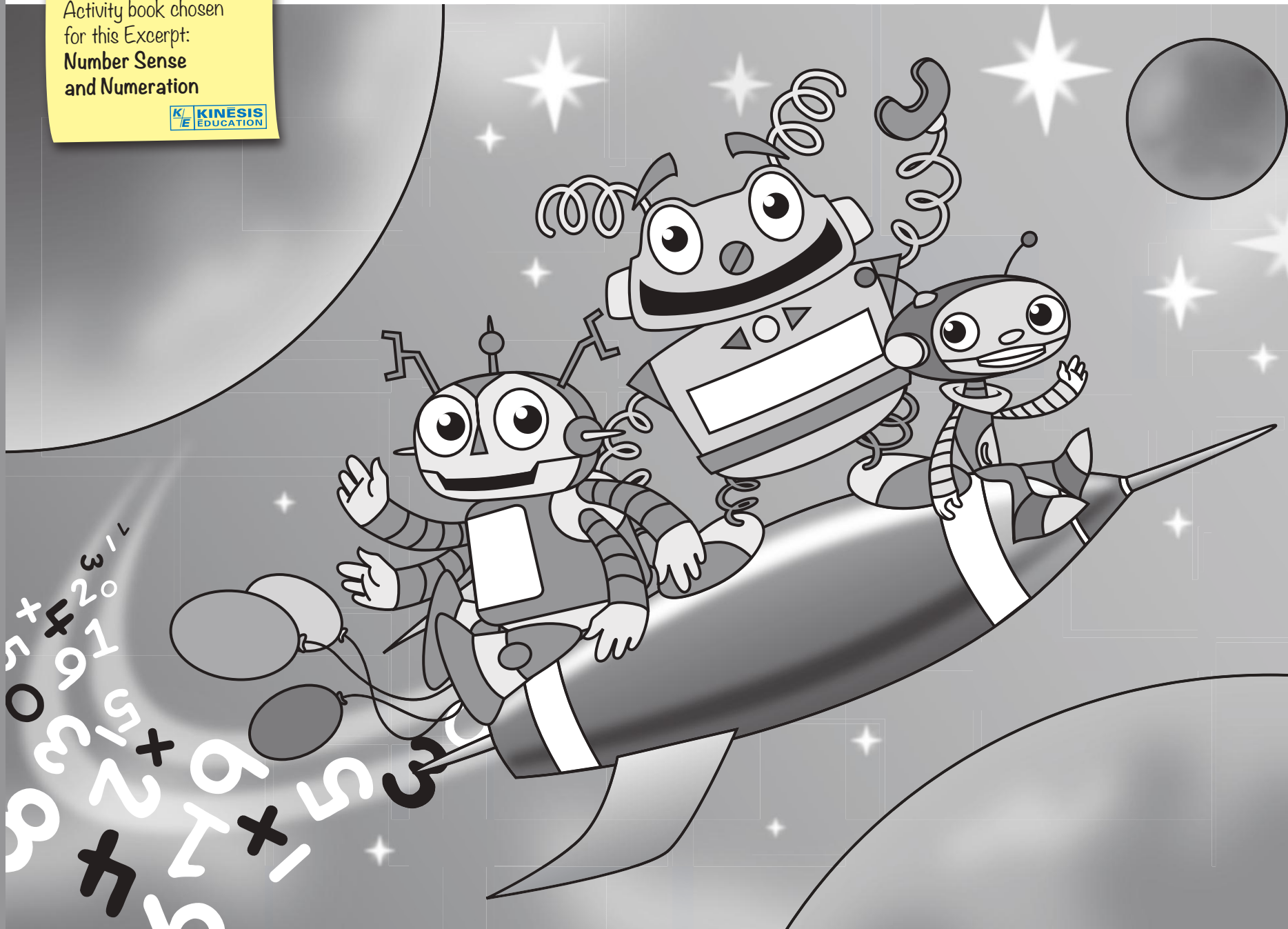
- Gather useful information for reporting and interviewing purposes
- Pinpoint specific areas for future math instruction.

DIAGNOSTIC ASSESSMENT

NUMBER SENSE AND NUMERATION



Activity book chosen
for this Excerpt:
**Number Sense
and Numeration**



3 Compare each number line representation to its corresponding ten frame or base ten representation.



Check Point #1

The **Check Point assessment activities** in this book have been designed for diagnostic assessment and are appropriate for use **prior to** a cycle of learning.



...ts the opportunity to demonstrate the value of using ... strategy for solving

Outlines the content to be assessed and often strategies to look for.



This number and heading relate to the same number in the Student Resource.



Materials Needed

Have two ten frames or a ten frame and a five frame, paper, and pencils available for the following assessment tasks. Make a number line template with 10 marked in the middle that students might use to create their own number lines.

A Ten and Five Frame Template is available at the end of this section (p. 25-26).

Lists the manipulatives and templates needed for the particular assessment activity.



* Reproducible templates can be found at the end of this section.



Number Sense and Numeration

3

Compare each number line representation to its corresponding ten frame or base ten representation.

■ "Tell me: are ten frames better than base ten blocks for showing numbers less than 10? Why or why not?"

Student Resource:
A reproduction of the activity in the Student Resource needed for the assessment tasks.




Question/Task	What To Look For
<p>Students use ten frames to represent 3 more and 2 less or fewer than 10.</p> <p>Show the quantity indicated in each square on a ten frame grid using ten frames.</p>	<p>Ten or five frames:</p> <ul style="list-style-type: none"> Students show 13 on two ten frames and a five frame. Next, students show 8 on a ten frame and then remove 3 from the ten frame and then remove 5 from the five frame.
<p>A robot has a tower of 10 cubes and is given 3 more cubes. How many does the robot have now? Show me on a number line."</p> <p>Say: "A robot has a ten frame but it is not full. It has 3 empty spaces. How many counters are in its ten frame?"</p>	<ul style="list-style-type: none"> Students accurately use the number line to represent the number story by beginning with 10 and counting on from there to add 3 more (+3) and mark 13. Students accurately represent the number story using the number line by beginning at 10. Then they count back 3 (-3) and mark 7.

Question/Task:
Open questions and tasks allow for a range of appropriate student responses and help reveal student strategies and thinking.
*Choose which tasks and questions suit your purposes the best. There is no need to do them all.

What to Look For:
Defines a range of appropriate responses and strategies to help you make connections between your observations and curriculum expectations.



15 Connect each number sentence using two digits to its representation on an open number line.



Check Point #4

The **Check Point assessment activities** in this book have been designed for diagnostic assessment and are appropriate for use prior to a cycle of learning.



In the following assessment tasks, we are looking for answers that use the strategy of adding or subtracting by 10 (a friendly number).

Outlines the content to be assessed and often strategies to look for.



Materials Needed

Have pencils, paper, and a hundreds chart available for the following assessment tasks.

Lists the manipulatives and templates needed for the particular assessment activity.



This number and heading relate to the same number in the Student Resource.



Number Sense and Numeration

15 Connect each number sentence using two digits to its representation on an open number line.

Have students use open number lines to show their thinking when solving two-digit addition and subtraction problems.

Student Resource:
A reproduction of the activity in the Student Resource needed for the assessment tasks.





Question/Task

What To Look For

Question/Task:

Open questions and tasks allow for a range of appropriate student responses and help reveal student strategies and thinking.

*Choose which tasks and questions suit your purposes the best. There is no need to do them all.



Students look at the bottom middle square of the grid and have a hundreds chart available for the second question.

Point to the number line for $57 + 14$. Why does adding work? Why does it make sense?"

Point to the first square in the top grid and ask: How does knowing the answer to $82 + 10$ help you find the answer to $82 + 9$? Show me using a hundreds chart."

- E.g.: "It is easier to add 10 to 57 rather than adding 14 to 57."
- "I know that 92 is 10 more than 82."
- "Yes." Students point to 82 on the number line. "I know that $82 + 10$ is 92" (student moves finger one to the left) "82 + 9 is 1 less," (student moves finger one to the left) "91."
- If students are using counting on from or back by 1s as a strategy, their answer might be no.

What to Look For:

Defines a range of appropriate responses and strategies to help you make connections between your observations and curriculum expectations.



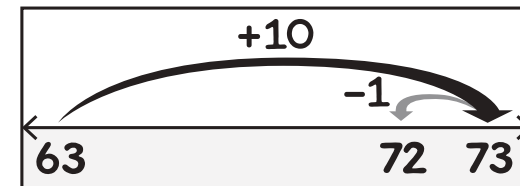
2. Say: "Solve $63 + 9$."

Say: "Represent/show me your thinking/strategy using an open number line."

Say: "Now try the above using $73 - 9$."

- The thinking we want to see may look like the following: " $63 + 10 = 73$. $63 + 9$ is 1 less. Therefore $63 + 9 = 72$."

E.g.:



- The thinking we want to see may look like the following: " $73 - 10 = 63$. Therefore $73 - 9$ would be 1 more than 63. $73 - 9 = 64$."



**STUDENT
OBSERVATION SHEETS**
NUMBER SENSE AND NUMERATION

GRADE 3
DIAGNOSTIC STUDENT OBSERVATION SHEET
NUMBER SENSE AND NUMERATION

Name: _____

Date: _____

Assessment Activity
 Correlation

3 Compare each number 1 to its corresponding ten



Number Sense and Numeration

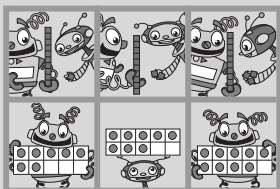
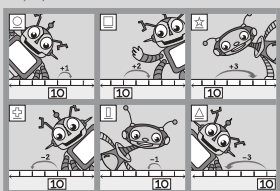
▶▶▶ **Check Point #1**

The **Check Point assessment activities** in this book have been designed for diagnostic assessment and are appropriate for use **prior to** a cycle of learning.



A ten and five frame template is available at the end of this section (p. 25-26).

3 Compare each number line representation to its corresponding ten frame or base ten representation.
 *The number line has two numbers that have ten blocks for numbers less than 100.
 Why or why not?



Student Knows

- Prior to the assessment list the appropriate knowledge, skills and strategies to look for during the assessment.
- For guidance with identifying these, use the **Assessment Focus** and **What to Look For** sections from the specific assessment activity you choose. Your curriculum documents are excellent sources as well.
- Check the appropriate boxes as you observe and listen to student responses during the assessment.



Next Steps for Learning

- Prior to the assessment list the same knowledge, skills and strategies here as you listed in the Student Knows column. Check the appropriate boxes as you observe and listen to student responses during the assessment.
-
-



Other Questions I Have About the Student's Learning

Here are some examples of questions you can ask students to probe for their mathematical thinking and understanding:

- "How do you know _____? Show me/tell me."
- "What is the same and what is different about _____ and _____?"
- "Do you think that...?"
- "What if...?"

Your assessment observations may bring up further questions about your student's learning. If so, record them here. You may find some of the open questions provided here helpful as you probe further for mathematical thinking and understanding.



GRADE 3
DIAGNOSTIC STUDENT OBSERVATION SHEET
NUMBER SENSE AND NUMERATION

Name: _____

Date: _____

Assessment Activity
 Correlation

15 Connect each number sentence on an open number line



Assessment

Number Sense and Numeration

▶▶▶ **Check Point #4**

The **Check Point assessment activities** in this book have been designed for diagnostic assessment and are appropriate for use **prior to** a cycle of learning.



Materials Needed

Have pencils, paper, and a hundreds chart available for the following assessment tasks.

15 Connect each number sentence using two digits to its representation on an open number line.
 *Use addition and open number lines to solve their thinking when solving two-digit addition and subtraction problems.

The grid contains two rows of math problems. The top row has three problems: $82+10$, $82+9$, and $82-11$. The bottom row has three problems: $57+4$, $57+14$, and $57+34$. Each problem is accompanied by a hundreds chart with a number line drawn across it.

Student Knows

Prior to the assessment list the appropriate knowledge, skills and strategies to look for during the assessment.
 For guidance with identifying these, use the **Assessment Focus** and **What to Look For** sections from the specific assessment activity you choose. Your curriculum documents are excellent sources as well.

Check the appropriate boxes as you observe and listen to student responses during the assessment.



Next Steps for Learning

Prior to the assessment list the same knowledge, skills and strategies here as you listed in the Student Knows column. Check the appropriate boxes as you observe and listen to student responses during the assessment.



Other Questions I Have About the Student's Learning

Here are some examples of questions you can ask students to probe for their mathematical thinking and understanding:

"How do you know _____? Show me/tell me."

"What is the same and what is different about _____ and _____?"

"Do you think that...?"

"What if...?"

Your assessment observations may bring up further questions about your student's learning. If so, record them here. You may find some of the open questions provided here helpful as you probe further for mathematical thinking and understanding.



TEACHER NOTES

Additional page
to enter your notes

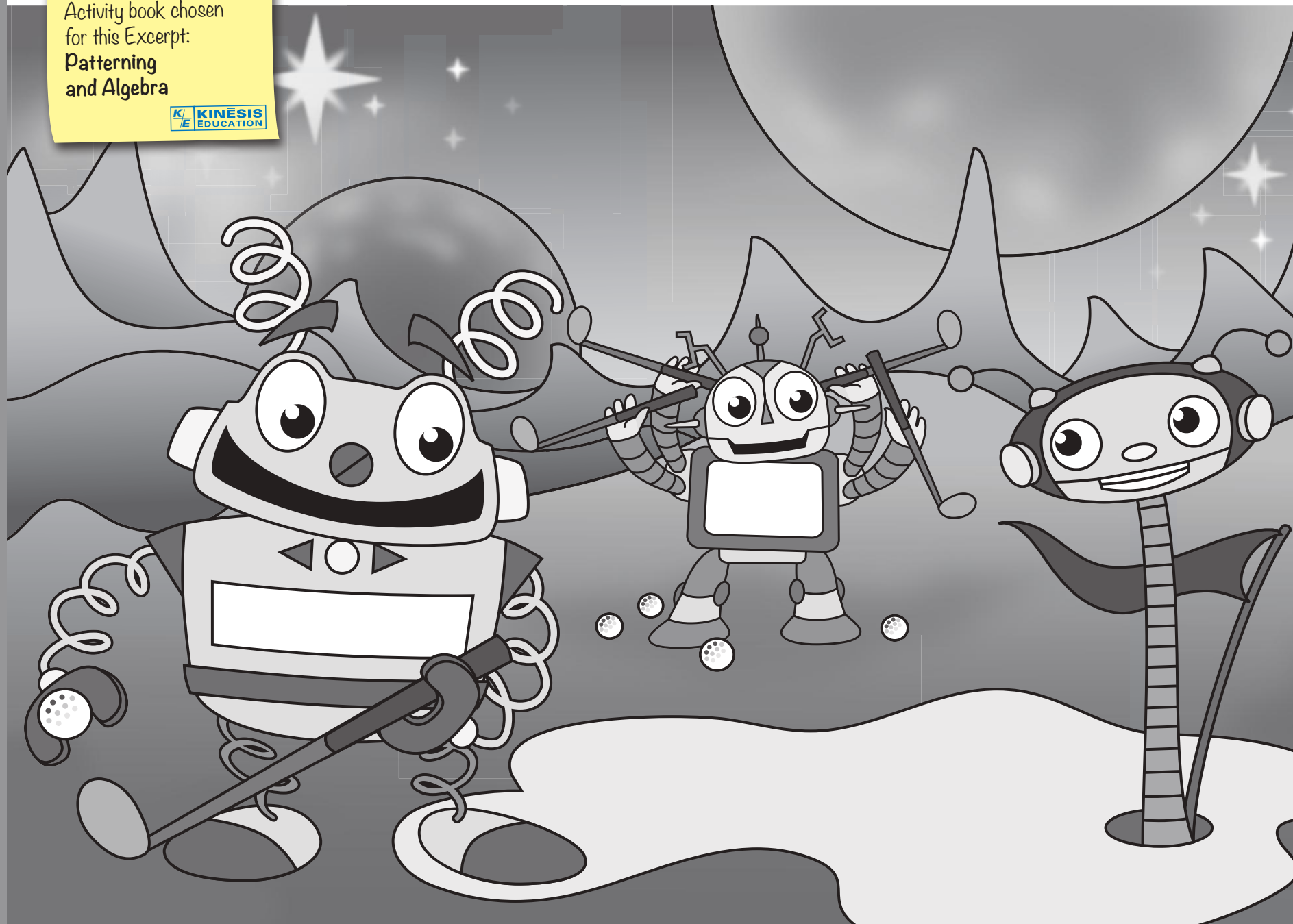


DIAGNOSTIC ASSESSMENT

PATTERNING AND ALGEBRA

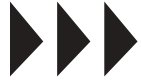


Activity book chosen
for this Excerpt:
**Patterning
and Algebra**



9

Connect each growing pattern by 10s or 25s to its missing part.



Check Point #1

The **Check Point assessment activities** in this book have been designed for diagnostic assessment and are appropriate for use **prior to** a cycle of learning.



Students with the opportunity to create growing patterns using coins begin to explore the pattern relationship. Students identify a missing term in a pattern. What do they need to know? What do they need to learn?

This number and heading relate to the same number in the Student Resource.



Outlines the content to be assessed and often strategies to look for.



Materials Needed

Have quarters, dimes, nickels, pennies, a pencil, and paper available for the following assessment tasks.

Lists the manipulatives and templates needed for the particular assessment activity.

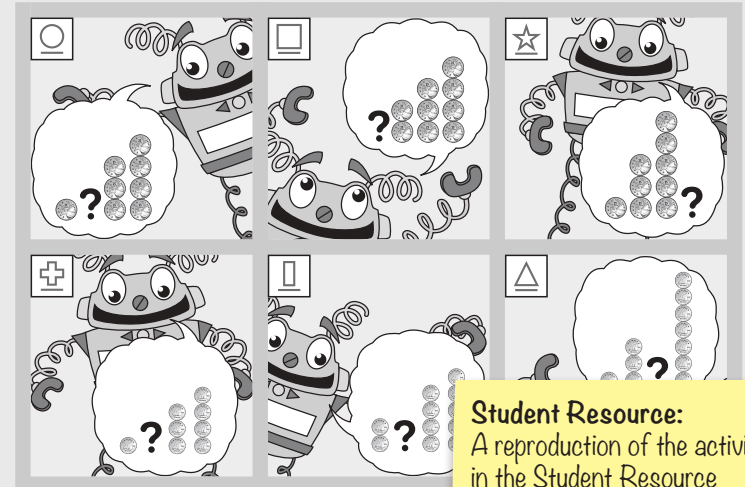


Patterning and Algebra

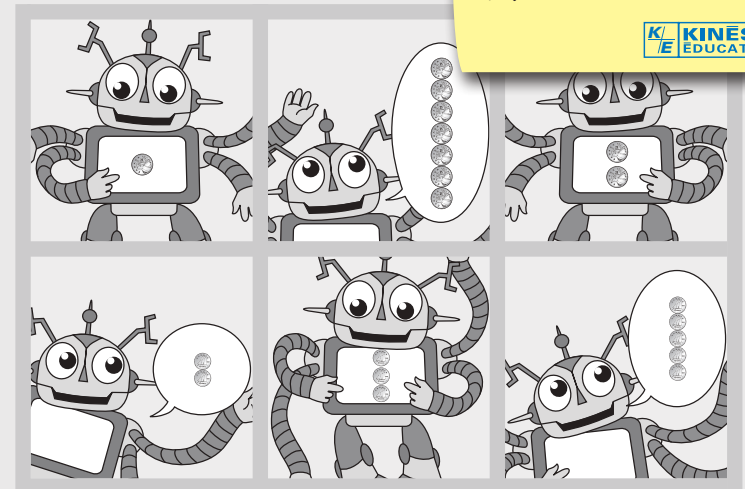
9

Connect each growing pattern by 10s or 25s to its missing part.

■ "Tell each pattern to a partner. How do you know?" "How much money is six quarters?"




Student Resource:
A reproduction of the activity in the Student Resource needed for the assessment tasks.




Question/Task	What To Look For
<p>Students look only at the top row of the top grid Student Resource.</p> <p>Use a pattern from the top grid. out it.”</p> <p>Ask: “What is the missing term? How do you know? Tell me and use quarters to show me.”</p>	<ul style="list-style-type: none"> Students select a pattern. The pattern may be the easiest to interpret, but they must use three terms. What do students do with the pattern they chose? Do they not use the pattern? Do students use the pattern to explain the growth in the pattern? Do students explain that each term increases or grows by the same amount (e.g., by 25, by 25 cents, or by one quarter (the core of the pattern)? Students identify the missing term in the growing pattern by identifying the number of quarters that fit in that part of the growing pattern.
<p>2. Students create the following using coins.</p> <p>Say: “A growing pattern starts with 5. Make a growing pattern using coins. What is your pattern? What is the pattern rule?”</p>	<ul style="list-style-type: none"> Students can create a number of different correct patterns as a response to this task. The following must be present: the pattern must grow by the same amount from one term to the next.

Question/Task:
Open questions and tasks allow for a range of appropriate student responses and help reveal student strategies and thinking.
*Choose which tasks and questions suit your purposes the best. There is no need to do them all.



What to Look For:
Defines a range of appropriate responses and strategies to help you make connections between your observations and curriculum expectations.



17

Connect each shrinking pattern to its extension.



Check Point #4

The **Check Point assessment activities** in this book have been designed for diagnostic assessment and are appropriate for use **prior to** a cycle of learning.



Materials Needed

Have pencils, paper, and a calculator available for the following assessment tasks.

Lists the manipulatives and templates needed for the particular assessment activity.



This number and heading relate to the same number in the Student Resource.



Provides the opportunity to work with shrinking patterns using

Outlines the content to be assessed and often strategies to look for.









Patterning and Algebra

17


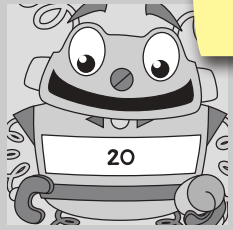
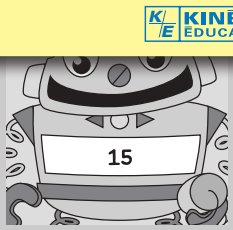
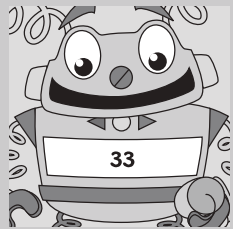


Connect each shrinking pattern to its extension.

■ This is the first of three activities that deal with shrinking patterns. "What are the next three terms in each pattern? How do you know?"

 29, 27, 25, ?	 29, 26, 23, ?	 28, 26, 24, ?
 100, 75, 50, ?	 30, 25, 20, ?	 39, 37, 35, ?

Student Resource:
A reproduction of the activity in the Student Resource needed for the assessment tasks.



 23	 20	 15
 33	 25	 22



Question/Task

What To Look For

Question/Task:

Open questions and tasks allow for a range of appropriate student responses and help reveal student strategies and thinking.

*Choose which tasks and questions suit your purposes the best. There is no need to do them all.



Look only at the top grid of their Student Resource and write down a pattern that decreases by 2 each term. What pattern could I be? How do you know that the pattern increases by 2?"

Look only at the top grid, say: "I am a pattern that could be written like the following: $30 - 2$, $30 - 4$, $30 - 6$." "The pattern $30 - 2$, $30 - 4$, $30 - 6$ is the same as a pattern in the top grid. Which one is it? How can you show that they are the same?"

Say: "I am a pattern that could be written like this: $30 - 0$, $30 - 5$, $30 - 10$. Which pattern am I? Why am I a shrinking pattern? Tell me or use a calculator or paper and pencil to show me how you know."

2. Open the whole activity in the Student Resource and have a pencil and paper available for the following. Say: "Use pencil and paper to make a shrinking pattern. What makes this a shrinking pattern?"

What to Look For:

Defines a range of appropriate responses and strategies to help you make connections between your observations and curriculum expectations.



- Students choose some or all of the patterns in the top and bottom right patterns.
- Students say any of the following: "The pattern increases by 2s; each number is 2 fewer than the one before it" etc.
- Students compare the two patterns ($30 - 2$, $30 - 4$, $30 - 6$ and the pattern in the top right corner of the top grid) and recognize that the same pattern can be represented in different ways.
- Students compare $30 - 0$, $30 - 5$, $30 - 10$ with the pattern in the bottom middle square. Students show that each number shrinks or is less than the one before it.
- What strategy do students use? Do they use trial and error? Do students use the patterns in the top and bottom grid of their Student Resource to get started? Or do students just know what to do? Do they know that it is a shrinking pattern because each term in the pattern is less than the one before it?



STUDENT OBSERVATION SHEETS


PATTERNING AND ALGEBRA

GRADE 3
DIAGNOSTIC STUDENT OBSERVATION SHEET
PATTERNING AND ALGEBRA

Name: _____

Assessment Activity
 Correlation

Date: _____

	Student Knows	Next Steps for Learning
<p>9 Connect each growing pattern by 10s or 25s to its missing part.</p> <p>Check Point #1</p> <p>The Check Point assessment activities in this book have been designed for diagnostic assessment and are appropriate for use prior to a cycle of learning.</p> 	<p><input type="checkbox"/> Prior to the assessment list the appropriate knowledge, skills and strategies to look for during the assessment.</p> <p><input type="checkbox"/> For guidance with identifying these, use the Assessment Focus and What to Look For sections from the specific assessment activity you choose. Your curriculum documents are excellent sources as well.</p> <p><input type="checkbox"/> Check the appropriate boxes as you observe and listen to student responses during the assessment.</p>	<p><input type="checkbox"/> Prior to the assessment list the same knowledge, skills and strategies here as you listed in the Student Knows column. Check the appropriate boxes as you observe and listen to student responses during the assessment.</p>

Other Questions I Have About the Student's Learning

Here are some examples of questions you can ask students to probe for their mathematical thinking and understanding:

"How do you know _____? Show me/tell me."

"What is the same and what is different about _____ and _____?"

"Do you think that...?"

"What if...?"

Your assessment observations may bring up further questions about your student's learning. If so, record them here. You may find some of the open questions provided here helpful as you probe further for mathematical thinking and understanding.

GRADE 3
DIAGNOSTIC STUDENT OBSERVATION SHEET
PATTERNING AND ALGEBRA

Name: _____

Date: _____

Assessment Activity
Correlation

17 Connect each shrinking



Patterning and Algebra

▶▶▶ Check Point #4

The **Check Point** assessment activities in this book have been designed for diagnostic assessment and are appropriate for use **prior to** a cycle of learning.



17 Connect each shrinking pattern to its extension.

• This is the first of three activities that deal with shrinking patterns. What are the next three terms in each pattern? How do you know?

Student Knows

Prior to the assessment list the appropriate knowledge, skills and strategies to look for during the assessment. For guidance with identifying these, use the **Assessment Focus** and **What to Look For** sections from the specific assessment activity you choose. Your curriculum documents are excellent sources as well.

Check the appropriate boxes as you observe and listen to student responses during the assessment.



Next Steps for Learning

Prior to the assessment list the same knowledge, skills and strategies here as you listed in the Student Knows column. Check the appropriate boxes as you observe and listen to student responses during the assessment.



Other Questions I Have About the Student's Learning

Here are some examples of questions you can ask students to probe for their mathematical thinking and understanding:

"How do you know _____? Show me/tell me."

"What is the same and what is different about _____ and _____?"

"Do you think that...?"

"What if...?"

Your assessment observations may bring up further questions about your student's learning. If so, record them here. You may find some of the open questions provided here helpful as you probe further for mathematical thinking and understanding.



TEACHER NOTES

Additional page
to enter your notes



analogue clock. A clock that shows the time with the position of its hands.

attribute. A trait of a shape, an object, or an event.

attribute blocks. A set of attribute blocks that usually includes five shapes (rectangle, square, triangle, circle, hexagon); each shape comes in three colours, two sizes, and two thicknesses.

capacity. The maximum quantity a container can hold.

congruent. Things that are the same shape and size.

conservation. The property of a number or shape by which its fundamental nature remains the same regardless of a change in physical arrangement, orientation, or attributes (e.g., colour, size). E.g.: A rectangle remains a rectangle no matter which way it is oriented.

connecting cubes. Small, plastic manipulative blocks that can attach to each other.

equilateral triangle. A triangle with three equal sides.

geoboard. A square board with a grid of pegs (often a 10 x 10 or 11 x 11 grid). Students use elastics to connect the pegs and make shapes.

graph. A drawing that shows data.

- **bar graph.** A graph that uses bars, either horizontal or vertical, to represent the frequency of an event or occurrence.
- **line plot.** A graph where each item in a set of data is represented by a symbol above a number on a number line.
- **pictograph.** A graph that uses pictures and symbols to represent each item in a data set.

hundreds chart. A 10 x 10 chart. Each square in the chart contains a whole number in order from 1 to 100.

irregular polygon. A polygon where all sides and angles are not equal.

isosceles triangle. A triangle that has two of three sides of equal length.

mass. A physical attribute of objects that can be measured in grams or kilograms. The amount of matter of an object or body.

non-standard units. Objects used as measurement units. Some examples are paper clips, cubes, straws, and yogurt containers.

Glossary of all words
found in italics in this
Diagnostic Assessment
Teacher Resource



number cube. A small plastic or wooden cube. Typically, each cube face shows a different numeral or number of dots from 1 to 6.

number line. A line that represents a set of numbers.

octagon. A polygon with eight sides.

one-to-one correspondence. The association of one object to only one number, symbol, or picture.

pattern blocks. Plastic or wooden manipulative sets that include the following: green equilateral triangles, orange squares, tan or white rhombuses and larger blue rhombuses, red trapezoids, and yellow hexagons.

pentagon. A five-sided polygon.

perimeter. The distance around a shape.

polygon. A closed shape of three or more straight sides.

prism. A three-dimensional figure with two parallel and congruent bases. Particular prisms are identified by the shape of their bases.

property (geometric). A characteristic of a shape or an object that is constant. For example, two geometric properties of triangles are that they all have three straight sides and three vertices.

quadrilateral. A four-sided polygon.

rectangle. A quadrilateral with four right angles. Opposite sides are equal.

regular polygon. A closed shape in which all sides are equal and all angles are equal.

rhombus. A parallelogram with equal sides. Squares and diamonds are rhombuses.

square. A rectangle with four equal sides and four right angles.

tally chart. A chart that uses one stroke mark for each item or occurrence counted.

ten frame. A 2 x 5 array. Students place counters, stickers, or dots to show quantities to 10.

trapezoid. A quadrilateral having only one pair of parallel sides.

vertex. The corner or endpoint where two lines meet.

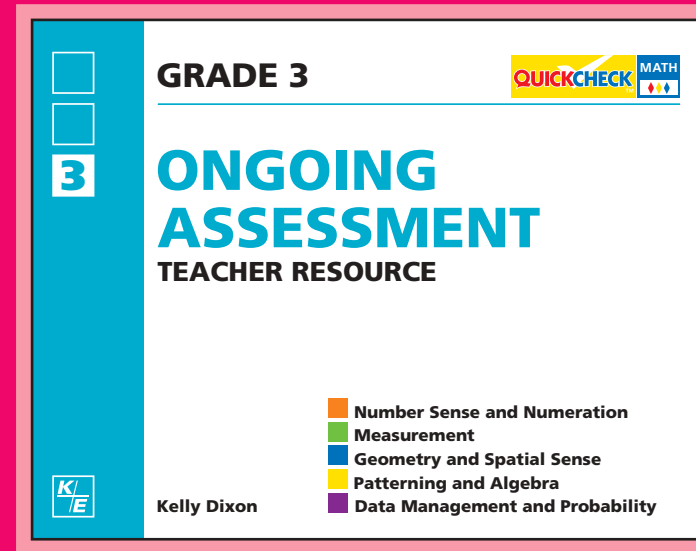
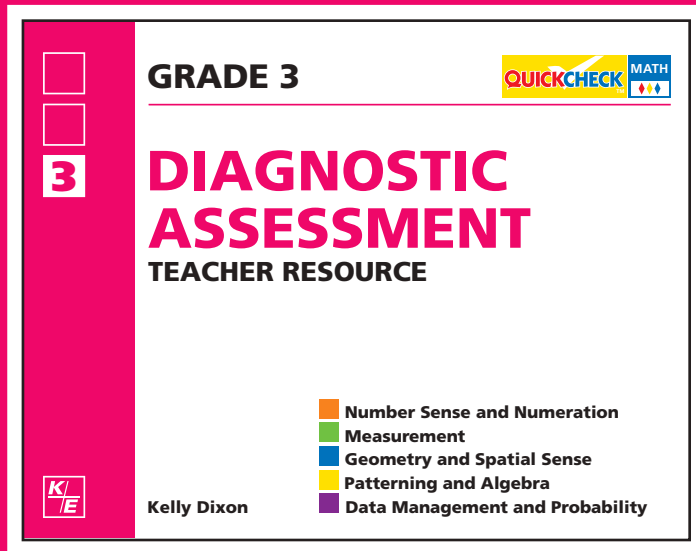
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