# ONGOING ASSESSMENT TEACHER RESOURCE 

 EXCERPTAssessment questions or tasks are provided for all 5 strands

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K/ KINESIS
```

Kelly Dixon

## Number Sense and Numeration

Measurement
Geometry and Spatial Sense Patterning
Data Management and Probability

# QUICKCHECK <br> MATH $\bullet \bullet$ <br> ONGOING ASSESSMENT TEACHER RESOURCE 

## QUICKCHECK MATH ASSESSMENT TEACHER AND STUDENT RESOURCES



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## KINDERGARTEN

## Grade level Kindergarten K K Kivesis

## ONGOING ASSESSMENT TEACHER RESOURCE

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Kelly Dixon

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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 Ongoing Assessment Teacher Resource provides both diagnostic and ongoing 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 Ongoing 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

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## QUICKCHECK MATH ONGOING ASSESSMENT TEACHER RESOURCE



## Patterning

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GATHER THE FOLLOWING FOR YOUR ASSESSMENT

## Assessment Teacher Resource

Choose an assessment activity from any of the math strand sections containec

| KINDERGARTEN |
| :---: | :---: | :---: |
| TEACHER RESOURCE |

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. Ongoing 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 Ongoing Assessment Teacher Resource.


```
Manipulatives and Templates
```

$\checkmark$ Gather the recommended manipulatives and templates* suggested in the assessment activity.


* Templates can be found at the end of a strand section where required. See pages 43, 44, 45, 46, 47, 48, 81, $110,159,160,161,162$, and 163.


## + Ongoing Student Observation Sheets

$\boxed{\square}$ Use your own method for recording your observations or photocopy the corresponding Student Observation Sheet found at the end of each strand section.


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 purposes during a cycle of learning. See the Grade 1 Diagnostic Assessment Teacher Resource for assessment activities that are appropriate for use prior to a cycle of learning.
2. Use any of the 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 and 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 an assessment activity, 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.

## ロッームーチームのシ

ONGOING ASSESSMENT NUMBER SENSE AND NUMERATION


## Assessment Focus

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

fty provides the opportunity for students to ate that they understand number conservation. are also asked to accurately count quantities less | K/ | KINESIS |
| :--- | :--- |
| EDUCATION |  | same number of objects. Do students recognize that the last number counted indicates the number of objects in that set (cardinality)? Do students use the strategy of counting objects one-to-one, subitizing, or aligning objects for one-to-one correspondence to compare equal quantities?

## Materials Needed

Have 10 connecting cubes in each of red and blue or 10 popsicle sticks and 10 straws available for the following assessment tasks.
Lists the manipulatives
and templates needed
for the particular
assessment activity.

| K/ IINESSIS |
| :--- |
| KDUCATION |

 Number Sense and Numeration

Relate each set to its corresponding set.

- If students have difficulty with activities four, five and six, give them more practice with counting
the same group of objects that you rearrange in different patterns in front of them.


[^0]| Question/Task | What To Look For |
| :---: | :---: |
| Question/Task: <br> Open questions and tasks allow for a range of appropriate student responses and help reveal student strategies and thinking. <br> *Choose which tasks and questions suit your purposes the best. There is no need to do them all. <br> ting cubes of the same colour, popsicle raws. <br> me four cubes." <br> our cubes further apart. <br> many cubes now? Did you need to count <br> above task and questions with other numbers. | Some strategies students may us <br> What to Look For: <br> Defines a range of appropriate <br> responses and strategies <br> to help you make connections <br> between your observations <br> and curriculum expectations. <br> — Visually identifying that there cubes without counting (subitizing). <br> Students may count the cubes again or they may recognize that the number of cubes hasn't changed, even though the arrangement has changed (number conservation). |
| 2. Using red connecting cubes, put a pile of six in front of students. (Popsicle sticks and straws can be used here as well). <br> Ask: "How many connecting cubes?" <br> Say: "Make a group of blue connecting cubes that has the same number." <br> Repeat the above task using other numbers. | Students count objects one by one, demonstrating that they understand that the last number counted indicates the number of objects in the set (cardinality). <br> Students may count out six cubes, or they may line up the red cubes and align their blue cubes to red cubes one-to-one (one-to-one correspondence). |

## $\gg$

## Check Point \#4

The Check Point assessment activities in this book have been designed for diagnostic assessment purposes during a cycle of learning.

## K/EIKINESIS

ats the opportunity to compose variety of ways. Students make ig connecting cubes. Students also fewer, or the same number of items. A five frame is introduced. What strategies do students use to complete the assessment tasks?

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

K/E] Kivesis to a tive fra assessment.

## Materials Needed

Have two-colour counters, a tin can, connecting cubes, and a five frame available for the following assessment tasks. Note: Two-colour counters can be made using quarters. Put a red circle sticker on one side and a yellow circle sticker on the other side.

sment activity should not happen until students ived instruction on composing five in different on comparing quantities with the same, more, tems. Students should also have been introduced

This number and heading relate to the same number Number Sense and Numeration

Compare each composition of 5 to its corresponding decomposition. - A five frame is introduced here


[^1]| Question/Task | What To Look For |
| :---: | :---: |
| Question/Task: <br> Open questions and tasks allow for a range of appropriate student responses and help reveal student strategies and thinking. <br> *Choose which tasks and questions suit your purposes the best. There is no need to do them all. <br> nts only look at the top grid of their source. <br> do you notice about all of the five <br> ints 10 two-colour counters and a tin can. <br> five counters and put them in the tin can." out all the counters. How many will fall out?" <br> Say: "Dump out all the counters. What do you notice? How many red; how many yellow; how many altogether?" <br> Say: "Use yellow and red connecting cubes to make five in the same way. Can you make five with the two colours in a different way? Show me." | What to Look For: <br> Defines a range of appropriate responses and strategies <br> "They are all full; they all have $f$ <br> to help you make connections different ways; different numbє between your observations counters make five." and curriculum expectations. <br> Students count five counters one by one, or take an amount and count on from there, e.g., they take two and then count "three, four, five." <br> Students use their own words to say that they counted five counters and put them into the can. They recognize that shaking or dumping the counters out won't change the number of counters (number conservation). <br> E.g.: "Some are red and some are yellow; there is more of one colour than the other; there are still five counters." <br> Students use one-to-one correspondence, or select correctly by subitizing to compose five in the same way as the counters. Do they compose five in a different way? |



## STUDENT OBSERVATION SHEETS

NUMBER SENSE AND NUMERATION


## 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 $\qquad$ ? Show me/tell me."
"What is the same and what is different about $\qquad$ and $\qquad$ ?"
"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.
$\qquad$


## 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 $\qquad$ ? Show me/tell me."
"What is the same and what is different about $\qquad$ and $\qquad$ ?"
"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.


Additional page
to enter your notes

## ロッームーチームのシ

ONGOING ASSESSMENT GEOMETRY AND SPATIAL SENSE



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

## Assessment Focus

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

## Ke| KINESIS

 strategles are students using to perform the assessmen tasks? Do students identify the shapes by their geometric properties or by association with their mental images of familiar objects and shapes?
## Materials Needed

Have a geoboard, elastics, and straws of different sizes available for the following assessment tasks.

Lists the manipulatives
and templates needed for the particular assessment activity.
ity gives students the opportunity to compare representations of triangles. Students discuss rent types of triangles are similar (e.g., geometric s such as number of sides and vertices). What ent



Geometry and Spatial Sense
1 Match each triangle to its equivalent.
Fold this activity so that it stands up on a table with the bottom grid facing students. "Find a triangle. - Fold this activity so that it stands up on a table with the bottom grid
Find another triangle. How are they same? How are they different?"


| Question/Task | What To Look For |
| :---: | :---: |
|  | Do students relate the triangle familiar to them? E.g.: "The sha <br> What to Look For: Defines a range of appropriate responses and strategies <br> Do students describe the triang to help you make comnections properties? E.g.: "The shape ha between your observations shape has three lines/sides/poi <br> and curriculum expectations. triangle." <br> Do students justify their answer by describing some of the geometric properties of a triangle? They may say that the shape is still a triangle but that it is "stretched" or "thinner/taller," or they may use another description. <br> If students do not see any similarity, make the equilateral triangle again and have students count the number of sides or vertices. Then stretch the triangle and repeat counting the sides or vertices. |
| 2. Have students look at only the bottom grid of their Student Resource. <br> Say: "Show me a triangle. How do you know that it is a triangle?" <br> Say: "Find another triangle. How do you know that it is a triangle?" <br> Say: "Use the straws to make a triangle." | Students may identify a triangle by their own mental image of what a triangle is, by comparing it to a real object in the environment that they identify as a triangle shape, or by counting sides or vertices. <br> Do students count the number of sides or vertices to make the comparison? <br> - Do students use three straws to make a triangle? Do they close their shape? |

## D

## Check Point \#2

The Check Point assessment activities in this book have been designed for diagnostic assessment purposes during a cycle of learning

K/E/KINESIS strategies are students using to perform the assessment tasks? Do they use tactile or visual comparison, or do they count the number of straight sides and vertices?

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

KE| Kinesis type ot rectangle.

## Materials Needed

Have a rectangle and a triangle attribute block, cut-outs of different representations of these shapes from the Shape Template, and a sorting mat available for the following assessment tasks. The reproducible Shape
Template can be found at the end of this Geometry section for the following assessment tasks. The reproducible Shape
Template can be found at the end of this Geometry section on page 110.
Lists the manipulatives
and templates needed
for the eparticular
assessment activity.

$$
\text { K/EINESTS }
$$

sment activity should not happen until have had instruction on comparing different ations of the same shapes. Students may have pduced to the fact that squares are a special strategies 10

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

K/EMINESIS nts the opportunity to compare is of the same shape. Students s are similar (e.g., geometric er of sides and vertices). What
$\square$ ey

## Geometry and Spatial Sense

1 Relate each set of shapes to its corresponding traditional shape. - This activity is the first in a series of four that deal with comparing and classifying non-traditional shapes and traditional shapes.
 A reproduction of the activity in the Student Resource needed for the assessment tasks.

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| Question/Task | What To Look For |
| :---: | :---: |
| Question/Task: <br> Open questions and tasks allow for a range of appropriate student responses and help reveal student *trategies and thinking. <br> *Choose which tasks <br> and questions suit your purposes <br> the best. There is no need to do <br> them all. <br> nts only look at the top grid of their Student lace the triangle and rectangle attribute ont of students as well. Point to the seal tangles that are not squares. <br> shape is the seal juggling? Show me/tell me. know?" | Students may select the rectans <br> What to Look For: they may say "door shapes," or <br> Defines a range of appropriate "rectangle." responses and strategies <br> to help you make connections <br> Students reason in one of the $f$ between your observations and curriculum expectations. <br> — They relate the rectangles to "They all look like doors. Some are uppea over dut they are all still door-shaped." <br> - They describe the rectangles by their geometric properties, e.g., "I know because I counted and they all have four lines/four sides/four corners." |
| 2. Cut out the shapes from the Shape Template and place them and a sorting mat in front of students. Put a rectangle attribute block on one side of the sorting mat and a triangle attribute block on the other side of the sorting mat. <br> Say: "Sort the shapes. Find all the triangles and put them here. Find all the rectangles and put them here. How do you know you are right?" | Do students sort all the shapes? If so, students may sort the shapes according to the following criteria. <br> - They count the number of sides and vertices. E.g.: "These all have three lines/sides/corners and these have four." <br> - They relate the groups of shapes to familiar objects. |

[^2]
# QUICKCHECK TM <br> <br> MATH <br> <br> MATH <br>  

# STUDENT OBSERVATION SHEETS 

GEOMETRY AND SPATIAL SENSE

## Date:



[^3]
## Date:



[^4]

Reproducible templates provided

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Additional page
to enter your notes
attribute blocks. Tools that help students learn. A set of attribute blocks usually includes five shapes (rectangle, square, circle, triangle, hexagon); each shape comes in three colours, two sizes, and two thicknesses.
capacity. The maximum quantity a container can hold.
cardinality. The last number counted in a set of objects, denoting the total number of objects in the set.
conservation. The property of number or shape by which its basic nature remains the same regardless of a change in physical position, orientation, or attributes (e.g., colour, size). E.g.: A group of four counters is four whether the four counters are arranged close together or farther apart.
connecting cubes. Small plastic manipulative blocks that can attach to each other.
counting on. An addition/counting strategy where students start with a known number and th a certain quantity more from that number.
five frame. A $1 \times 5$ array. Students place counters, stickers, or dots to show quantities to five.

Glossary of all words found in italics in this Ongoing Assessment Teacher Resource
geoboard. A square board with a grid of pegs (often a $10 \times 10$ or $11 \times 11$ 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.
- pictograph. A graph that uses pictures and symbols to represent each item in a data set.
hundreds chart. A $10 \times 10$ chart. Each square in the chart contains a whole number in order from 1 to 100 .
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, yogurt containers.
number composition. The joining of two numbers to make a third greater number. E.g.: Ten can be composed of a group of four and a group of six or a group of nine and a group of one.
number cube. A small plastic or wooden cube. Typically, each cube face shows a different numeral or number of dots from one to six.
number decomposition. The separation of a number into smaller parts. E.g.: Ten can be decomposed into a group of four and a group of six or a group of nine and a group of one.
number line. A line that represents a set of numbers.
order irrelevance. The fact that objects in a set can be counted by starting with any object in the set and the total number will be the same.
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 rhombuses and larger blue rhombuses, red trapezoids, and yellow hexagons.
polygon. A closed shape of three or more straight sides.
properties. Qualities of objects that can be determined by the five senses: touch, taste, seeing, hearing, and smelling.
rectangle. A closed shape with four right-angle vertices and four straight sides. Opposite sides are equal.
subitizing. The ability to visually recognize a number of objects without counting.
square. A rectangle with four equal sides and four right angles.
ten frame. A $2 \times 5$ array. Students place counters, stickers, or dots to show quantities to ten.
triangle. A closed shape with three straight sides and three vertices.
vertex. The corner or endpoint where two lines meet.



## KINDERGARTEN ASSESSMENT RESOURCE PACKAGE

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