



Have fun with an

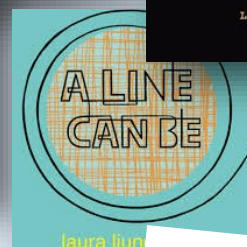
# OZOBOT



How will Ozobot read colours?

How can I connect these books to Ozobots?

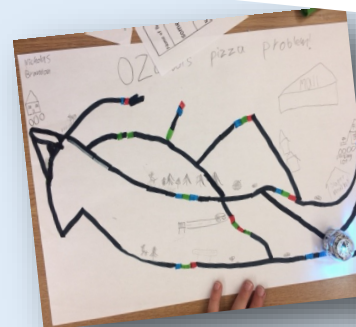
How will Ozobot read lines?



What kind of Ozobot story can I write?



# Inquiry



Name	Story Framework
Name of Book/Story	Date
somebody	Ozobot
wanted	waited to order pizza from Bydars
but	but they were out
so...	no waiter took home and made his own

# How can Ozobots inspire students to read and write?

Create journal  
entries about  
Ozobot

Write stories  
about Ozobots.

Read books  
about colour  
& line.

Create maps or  
paths for  
Ozobots.

Create codes for  
Ozobots to discover  
patterns.



## **A Simple *Line...* A Bit of Colour**

Has so many possibilities ...

**Books ... Ozobots ... Math ... Language Arts**

What can we do? ...

**ADST**

Applied Design, Skills, and  
Technology

**Math**

**ELA**

English Language Arts

### **Curricular Competency Descriptors:**

⇒ Ideating

⇒ Making

⇒ Sharing

⇒ Safety

⇒ Reasoning and analyzing

⇒ Understanding and Solving

⇒ Communicating & Representing

⇒ Connecting and reflecting

⇒ Comprehend and connect

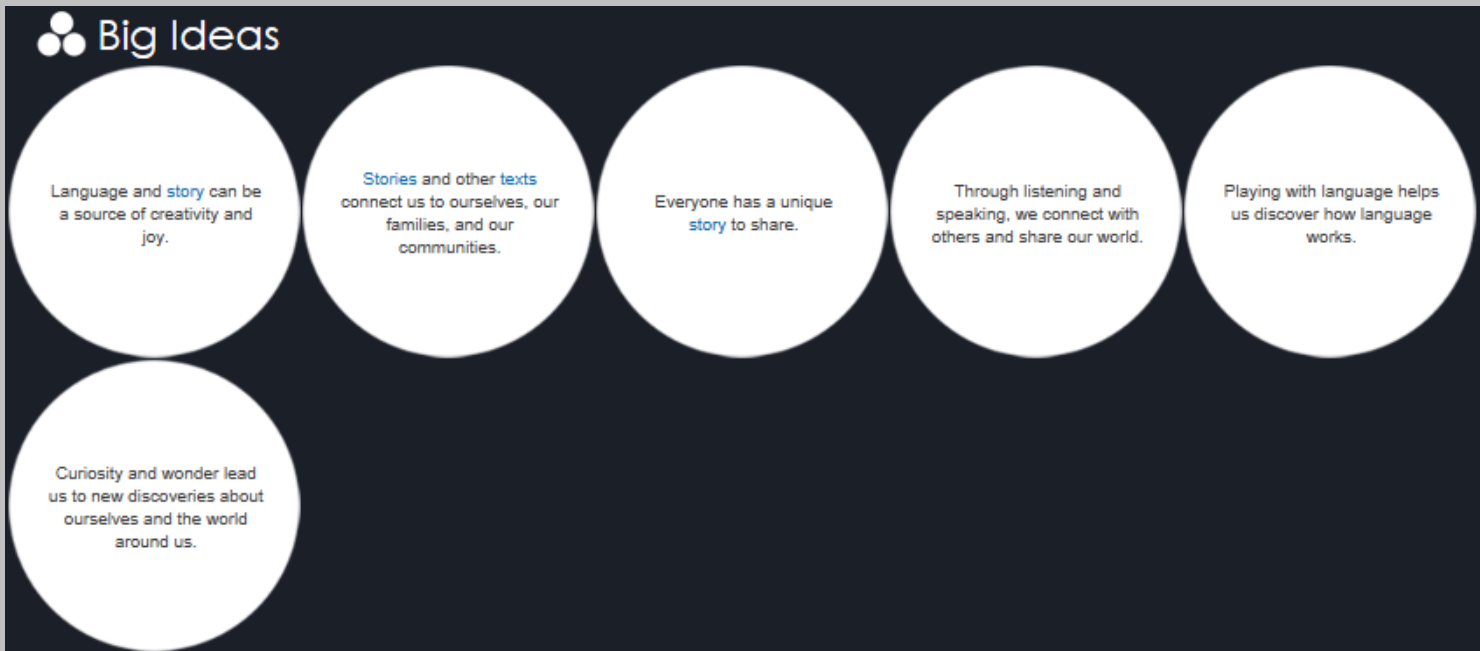
⇒ Create and communicate

# Ozobots

So many possibilities ...

## English Language Arts

### Grade 2 example



## BIG IDEAS


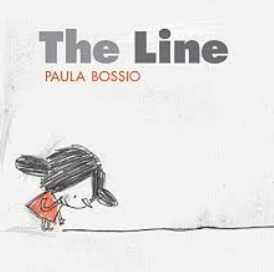


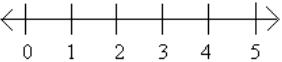
Designs grow out of natural curiosity.

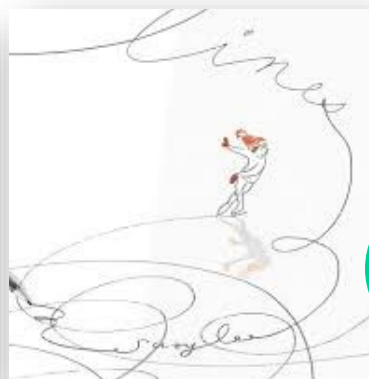
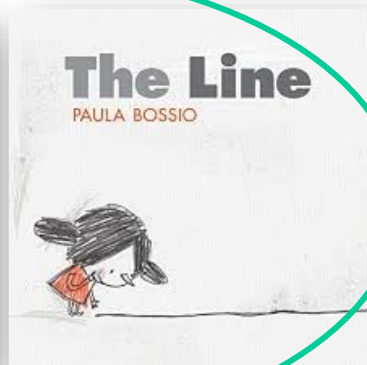
Skills can be developed through play.

Technologies are tools that extend human capabilities.

## Learning Standards

Curricular Competencies	Content
<p><i>Students are expected to be able to do the following:</i></p> <p><b>Applied Design</b></p> <p><b>Ideating</b></p> <ul style="list-style-type: none"> <li>Identify needs and opportunities for designing, through exploration</li> <li>Generate ideas from their experiences and interests</li> <li>Add to others' ideas</li> <li>Choose an idea to pursue</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Choose tools and materials</li> <li>Make a <b>product</b> using known procedures or through modelling of others</li> <li>Use trial and error to make changes, solve problems, or incorporate new ideas from self or others</li> </ul> <p><b>Sharing</b></p> <ul style="list-style-type: none"> <li>Decide on how and with whom to <b>share</b> their product</li> <li>Demonstrate their product, tell the story of designing and making their product, and explain how their product contributes to the individual, family, community, and/or environment</li> <li>Use personal preferences to evaluate the success of their design solutions</li> <li>Reflect on their ability to work effectively both as individuals and collaboratively in a group</li> </ul> <p><b>Applied Skills</b></p> <ul style="list-style-type: none"> <li>Use materials, tools, and technologies in a safe manner in both physical and digital environments</li> <li>Develop their skills and add new ones through play and collaborative work</li> </ul> <p><b>Applied Technologies</b></p> <ul style="list-style-type: none"> <li>Explore the use of simple, available tools and <b>technologies</b> to extend their capabilities</li> </ul>	<p><i>Students are expected to use the learning standards for Curricular Competencies from Applied Design, Skills, and Technologies K–3 in combination with grade-level content from other areas of learning in cross-curricular activities to develop foundational mindsets and skills in design thinking and making.</i></p>

Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
With thanks to Adrienne Gear for this inspirational book list and Janice Novacowski for the linear measurement ideas.			
 <p>A Line Can Be by Laura Ljungkvist</p>	<p>Turn each page to follow a line as it's described and transformed in this creative way and that.</p>	<p>Word choice: words to describe lines</p> <p>Find some lines in your environment; describe them.; use the descriptors you've created along with the ones from the book. Write some free-verse poetry to accompany the wordless images in Suzy Lee's book, <u>Lines</u>.</p>	<p><b>Linear Measurement:</b></p> <p>Measurement is both a concept and a process.</p> <p>Measurement is a comparison of the size of one object with the size of another.</p> <p>Measurement consists of a numerical value and a unit descriptor.</p>
 <p>The Line PAULA BOSSIO</p> <p>by Paula Bossio</p>	<p>Take each page in this wordless picture book slowly and listen to the descriptions offered by your students. Turn and talk is a must!</p>	<p>Word choice: Describe the lines in Paula Bossio's book, <u>The Line</u>. E.g.</p> <ul style="list-style-type: none"> <li>• Loop de doop, twirl about line</li> <li>• Cursive writing round and round circular lines</li> <li>• Hang from your fingertips, monkey bar, swinging lines</li> </ul>	<p>Attributes that are measured by linear measurement are length, height, width and distance.</p> <p>The distance "around" (perimeter, circumference) a shape or object is also a type of linear measurement.</p> <p>There is a strong connection between number and measurements. Measurements is essentially assigning a number to an attribute.</p>
 <p>Lines</p> <p>by Suzy Lee</p>	<p>How can such simple lines capture the wordless story of a young skater on a frozen pond?</p>	<ul style="list-style-type: none"> <li>• Gather figure skating vocabulary and phrases as a class.</li> <li>• Listen to YouTube clips as sports commentators describe what they see; gather more language,</li> <li>• Create free verse poems for each page in this wordless picture book with the skating-specific language gathered.</li> </ul>	<p>Models such as number paths (counting each spot) and number lines (measurement, counting the distance between marks) highlight this connection.</p> <div style="text-align: center;">     </div>



## **Word Choice:**

- Develop a bank of words to describe lines.
- Gather terms known to figure skaters.
- Combine gathered words and technical terms to artfully create text for Suzy Lee's **Lines**

*Figure Skating Jumps & Spins*  
New to figure skating and not sure what the difference is between a Lutz and a Salchow? Kinzie's Closet has put together a glossary of terms for ice skating jumps and spins to help you figure it out.

Gather skating-specific terms from sites like this:

<https://www.kinziescloset.com/jumps---spins.html>

Youtube 2:55

<https://www.youtube.com/watch?v=YHmUmXmXNOc>

Kurt Browning in hockey skates 1:01

<https://www.youtube.com/watch?v=YXg-Jzetgi0>

<https://www.thoughtco.com/assorted-ice-skating-terms-1282111>

<https://skatecanada.ca/skating-lessons/glossary/>

See example on next page:

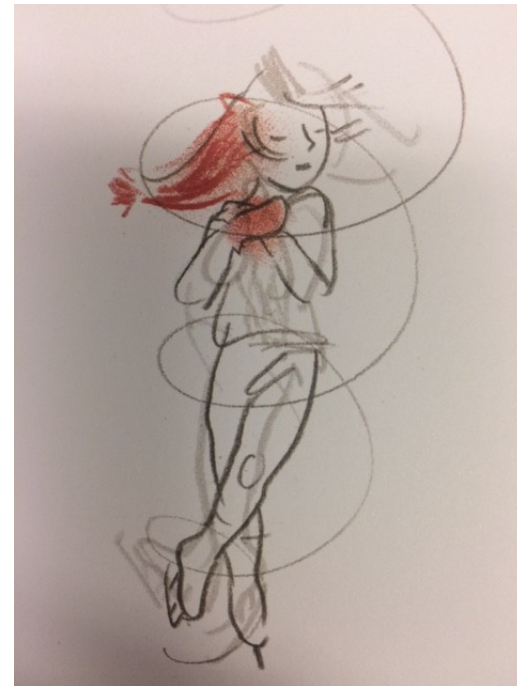
## A few examples to get you going:

A bank of words to describe lines:

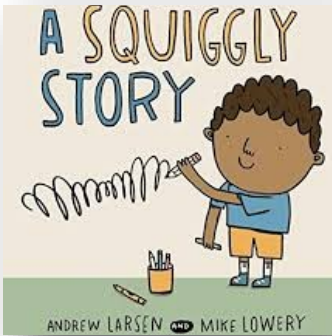
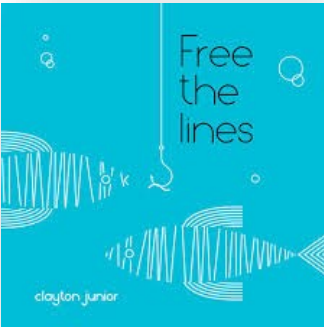

hard	soft	simple	complicated
up	down	thick	thin
above	below	easy	tricky
clean	messy	curvy	straight

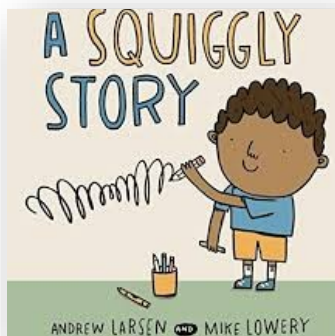
Figure skating terms:

salchow	toe loop jump	Waltz jump	camel spin
crossover	bunny hop	death spiral	lutz or flutz?
spiral	swizzle	twizzle	axel jump



With a **simple** stroke of the blade, and a leap in the air, she skillfully completes a basic **Waltz jump**. As she glances below a **curvy** line appears on the ice to indicate a perfect take-off.

Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
With thanks to Adrienne Gear for this inspirational book list and Janice Novacowski for the linear measurement ideas.			
 <p>A Squiggly Story by Andrew Larsen</p>	<p>Yes, of course a story can be written down, but can a few images represent a story told aloud? Yes of course it can!</p>	<p>Offer students provocations to whet their appetites and capture their oral language as they play with objects, pretend, and tell a story.</p> <p>Before they write it, they need to say it. Lots of practice saying stories leads to confident writers in years to come.</p> <p>A story is someone's ideas written down.</p>	<p>Provide each student with a length of string or ribbon. Ask them <i>How can you use this ribbon to measure?</i></p> <p>Students may compare their ribbons to objects in the classroom describing the relationship (longer than, shorter than). Students may iterate the ribbon to measure the length of longer objects.</p>
 <p>Free the Lines by Clayton Junior</p>	<p>White lines on a blue page accompanied by a few images in black tell a profound story of our interaction with nature. Food for thought for sure!</p>	<p>What does this author know about fishing?</p> <p>Tell the story.</p> <p>Do some environmental research.</p> <p>Take action. What does this book inspire you to do?</p>	<p>Provide or have students choose different items to measure and observe how they measure and what tools they use.</p> <p>Are students able to compare item's lengths by direct comparison? Do they line items up along a base line/ use a consistent point of origin?</p>
 <p>The Lines on Nana's Face by Simona Ciralo</p>	<p>If you are starting to worry about a few lines emerging on your face, read this book! It will shed a whole new perspective about their importance and worth.</p>	<p>What are the lines on the faces of our elders? <a href="http://www.rickys-nyc.com/skin-care/here-are-the-habits-that-give-you-wrinkles-on-the-face/">http://www.rickys-nyc.com/skin-care/here-are-the-habits-that-give-you-wrinkles-on-the-face/</a></p> <p>Each line tells a story. Invent a heartfelt memory for each wrinkle on a face.</p>	<p>Comparing lines lengths.</p> <p>Do students use specific mathematical vocabulary to describe measurements? <b>longer/shorter, taller/shorter</b> rather than bigger/smaller?</p> <p>Do students demonstrate an understanding of conservation? If you measure a length of ribbon on a table and then hold it up, do students</p>



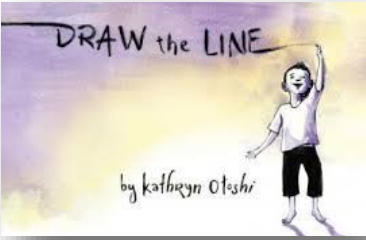

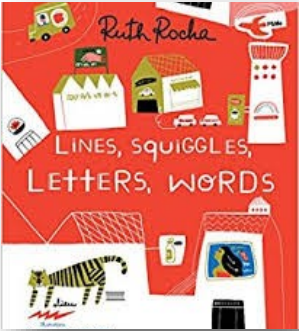

Provocations for play and story

...

using and making **lines** ...



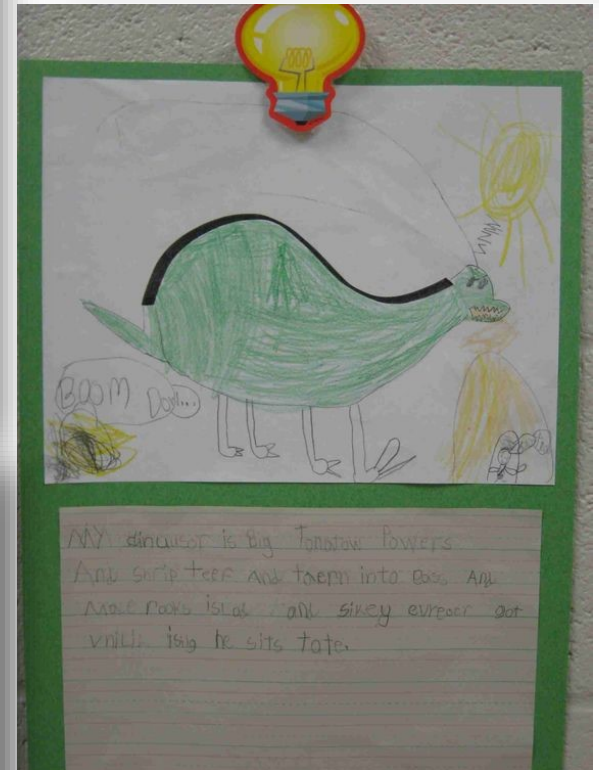
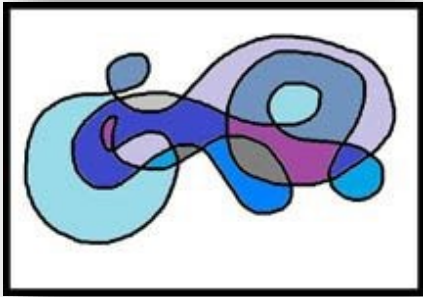
Compiled and created by: Debbie Nelson & Carol Walters with Joan Pearce and Kara Dawson ...

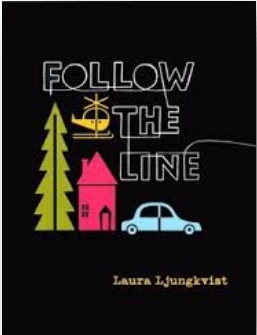
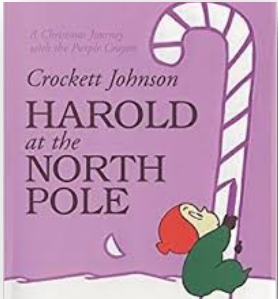

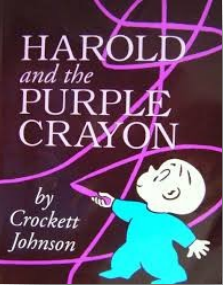
Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
With thanks to Adrienne Gear for this inspirational book list.			
 <p>Draw the Line by kathryn Otoshi</p>	<p>A line can be playful, but it can also cause friction between two young boys. Will they be able to solve their problems?</p>	<p>Show, Don't tell strategy to build vocabulary and phrases to describe the emotions in this book</p> 	<p>Use your pencil and ruler to draw some straight lines on your piece of paper to make an interesting pattern. You can draw as many or as few lines as you like. Describe what you see in your pattern. Can you find any shapes which have three sides? What about four sides? Find the shape or shapes with the most sides. Try this activity with loose curvy lines. What do you notice? <a href="https://nrich.maths.org/7009&amp;part=">https://nrich.maths.org/7009&amp;part=</a></p>
 <p>Lines, Squiggles, Letters, Words by Madalena Matoso</p>	<p>Pedro was amazed at all he saw, but he was often confused. At school he learns what some of these strange squiggles mean, until one day he's reading everything!</p>	<p>Go for a walk; ride a city bus, take note when travelling from here to there of all the print and messages in your community, on clothing</p> <p>Create images from the perspective of a non-reader and a reader</p>	<p>Spatially challenging books include those which examine scenes from various angles or perspectives, that include maps and spatial language, and has illustrations which require special attention to decipher.</p> <p>Not difficult to imagine that the story's curious main character also encountered numbers and their interesting formations...maybe lines, squiggles, letters, words <b>&amp; numbers</b>.</p>
 <p>The Squiggle by Carole Lexa Schaefer</p>	<p>Squished at the end of the class line, she sees a string with limitless possibilities as long as there's an imagination at play!</p>	<p>Create squiggle art using string</p> <p>Do a mini, 'How to draw' inquiry. What would you like to draw? Do a search for 'How to draw' images or find a step-by-step YouTube video and follow along.</p> <p>With a completed image, use a piece of string and follow along a line. Glue in place.</p>	<p>There are times when you don't want a number to give you a count of something. Instead, you want a number to indicate the position of something in a group—its order in a list. In this case you would use ordinal numbers.</p> <p>Build curiosity in line ups..... who's last in line like our story character? Is the person last in line more likely to be distracted? Is this always the case?</p>

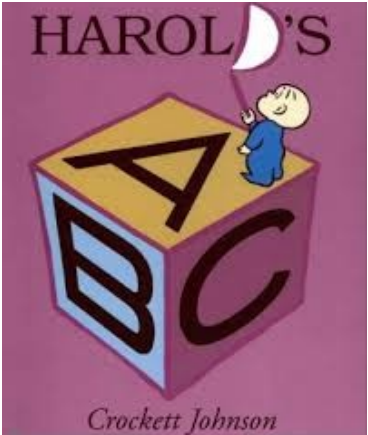

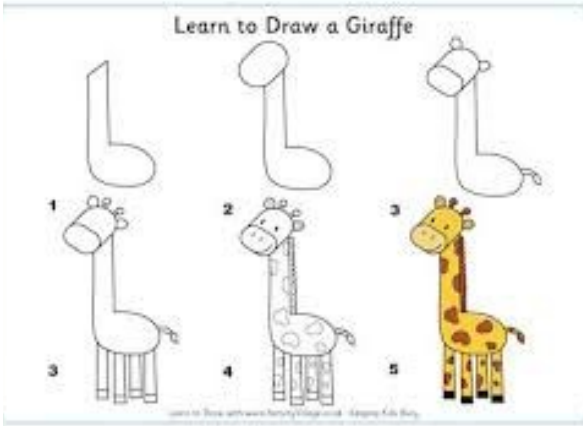

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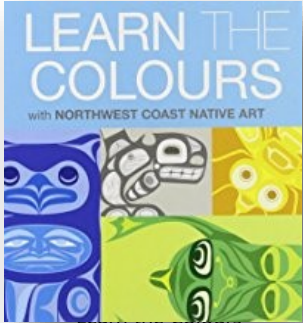
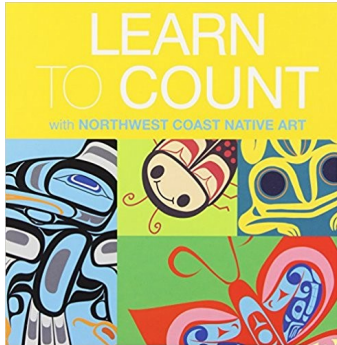
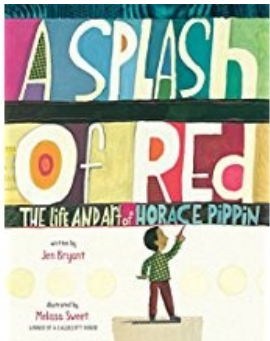
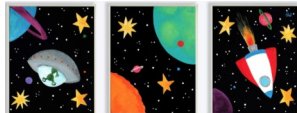

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Lexa  
Schaefer

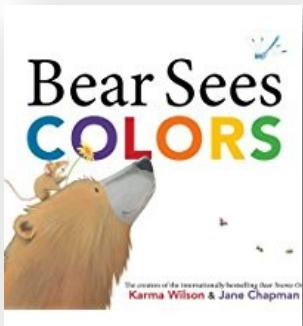
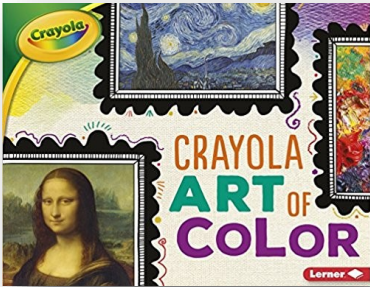
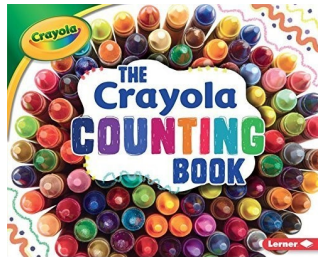
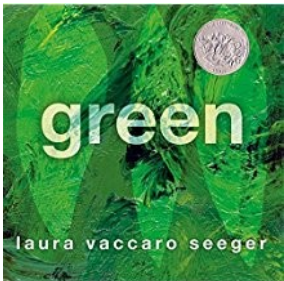

illustrated  
by  
Pierre  
Morgan











Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
With thanks to Adrienne Gear for this inspirational book list.			
 <p>Follow the Line by Laura Ljungkvist</p>	<p>Follow the line through a city. See its people, traffic, signs and lights, across the ocean until you are so exhausted, it will be time to sleep!</p>	<p>Distinguish between the main idea of each page and its details. Create a two column chart labelled main ideas and details.</p>	<p>Every scene contains questions designed to get children counting, thinking and observing. All great OZOBOT skills. Following the same line throughout the whole book is a delightful spatial and ridiculous reasoning challenge. Children love it! Trace and draw shapes with one continuous line. Listen for language related to over, under, left, right, above, below etc. (p.20)</p> <p><a href="http://www.edu.gov.on.ca/eng/">http://www.edu.gov.on.ca/eng/</a></p>
 <p>Harold and the North Pole by Crockett Johnson</p>	<p>It was Christmas eve, and Harold had to have a Christmas tree before Santa Claus arrived. During his trip north, Harold draws all he needs.</p>	<p>Using a purple crayon,, sketch and label the images of Christmas.</p> <p>Find a How to Draw Christmas book to help those students who claim, "I don't know how to draw _____!" Or simple do an online search for 'How to draw' items.</p>	<p>Left over candy canes 3 Act Task.</p> <p><a href="http://www.therecoveringtraditionalist.com/leftover-candy-canes-3-act-math/">http://www.therecoveringtraditionalist.com/leftover-candy-canes-3-act-math/</a></p> 
 <p>Harold and the Purple Crayon by Crockett Johnson</p>	<p>Harold is about to lead you on a creative journey of cause, effect and what's next?</p> <p><a href="https://www.youtube.com/watch?v=mknkyzgafU4">https://www.youtube.com/watch?v=mknkyzgafU4</a></p>	<p>How many expressions can you find that use the word draw? What does each expression or idiom mean? Can you illustrate your favourites? For example:</p> <ul style="list-style-type: none"> <li>• Draw a line in the sand,</li> <li>• Draw blood,</li> <li>• Draw a bath,</li> <li>• Draw the blinds</li> </ul>	<p>How many different lines are there and how many ways can you use the word in mathematical contexts?</p> <ul style="list-style-type: none"> <li>• A fine line,</li> <li>• Over the line,</li> <li>• End of the line,</li> <li>• Between the lines</li> </ul>

Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
With thanks to Adrienne Gear for this inspirational book list.			
 <p>by Crockett Johnson</p> 	<p>Follow Harold's purple crayon as it creatively invents images for each letter of the alphabet..</p>	<p>Create a class book in which each child creates a sketch of an item that matches the letter they have. For the, "I don't know how to draw" crowd, get them doing an internet search for, <b><i>how to draw a giraffe</i></b> for example</p>  <p>If your students want to watch a step by step process, do a Youtube search. Chances are you'll find a great clip showing you just how to draw a giraffe or anything else! You're after!</p> <p><a href="https://www.youtube.com/watch?v=LjVlld6_B6k">https://www.youtube.com/watch?v=LjVlld6_B6k</a></p>	<p>Create a class book using different crayon colours.</p> <ol style="list-style-type: none"> <li>1. Choose a number of different colour crayons. (1-22 in a primary class) A pack of 24 will suffice.</li> <li>2. Create a picture that uses that number of crayons. If you have the number 8 draw the number 8 on the left of your paper and then create an image with 8 colours.</li> </ol> <div style="display: flex; align-items: center; justify-content: center;"> <div data-bbox="1554 824 1644 954" style="font-size: 48px; margin-right: 10px;">8</div>  </div>

Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
Books about Colours ...			
 <p>By Corey Bullpit</p>	<p>Beautiful, Northwest Coast Native art is used as the background to share colour names.</p>	<p>Create colourful pages; each with the name of a colour. There are so many colour words that are less frequently used. Which ones can your students find?</p>	 <p>Beautiful counting text by the same publisher.</p>
 <p>A Splash of Red: The Life and Art of Horace Pippin by Jen Bryant</p>	<p>A story of the 1800s, Horace Pippin loves to draw, but when he's wounded in the war, will he ever draw again?</p>	<p>If Horace were introduced to Ozobots, what would he create as a path for it to follow? Be an artist for your Ozobot and create a map, a path, a neighbourhood, or a city for your Ozobot to discover.</p>	<p>"Horace Pippin was a curious and observant man. He found his subjects almost everywhere."</p> <p>He created about 140 works of art based on childhood memories, family stories, photographs, movies and current events.</p> <p>Invite students to choose a number of their own mini pieces to paint. It could be a 3 by 1 triptych or a 3X3 square image made from individual pieces.</p> 
 <p>Pantone Colours</p> <p>Compiled and created by: Debbie Nelson &amp; Carol Walters with Joan Pearce and Kara Dawson ... School District #71 Comox Valley, Vancouver Island, B.C.</p>	<p>In Pantone Colours, children are introduced to 9 basic colors and 20 shades of each. Colour names can also refer to a variety of dark, light, and in-between tones.</p>	<ul style="list-style-type: none"> <li>Gather paint chips from the paint section of a hardware store. Create colourful poetry with a simple stem such as,</li> <li>"Orange can be ... macaroni and cheese, A basketball, Hawkins cheesies, A goldfish, Orange can be an orange!</li> </ul>	<p>Fold a paper in quarters and have students paint and repeat an image in each box.</p> <p>Choose 4 colours from the 9 basic colours.</p> <p>Choose your first colours. Paint a shape/design in one quadrant. Choose another quadrant and experiment with another colour and shades of it. Add white to create different shades.</p>

Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
Books about Colours ...			
 <p>By Karma Wilson</p>	<p><a href="http://www5.sd71.bc.ca/literacy/wp-content/uploads/2010/06/Bear-Sees-Colours-2.pdf">http://www5.sd71.bc.ca/literacy/wp-content/uploads/2010/06/Bear-Sees-Colours-2.pdf</a></p>	<p>To help students learn a few Ozobot codes, use the pattern from this text to explain what Bear does when he sees colour combinations.</p> <p>E.g. Bear goes slow when he sees red, black, red. Bear goes at turbo speed when he sees blue, green, blue. (See page 25 for examples of some colour codes or search on line.)</p>	<p>How far does Bear go?</p> <p>Draw lines of different lengths.</p> <p>Estimate, measure and record lengths. (standard and non-standard units)</p>
 <p>Crayola Art of Colour by Mari Schuh</p>	<p>Shiny gold, bright yellow, soft green, and dark blue. Artists use many different colors to create beautiful paintings. What do the colors mean? How do they make you feel? What stories do colors tell?</p>	<p>Encourage readers to create their own art and discover the colors in artwork through bright photos and lively text.</p>	<p>Crayola Counting Resource</p>  <p><a href="https://portal.sd71.bc.ca/group/l7lwzs1/primarymath/numbersenseprim/Documents/Partitioning%20Crayons.pdf">https://portal.sd71.bc.ca/group/l7lwzs1/primarymath/numbersenseprim/Documents/Partitioning%20Crayons.pdf</a></p>
 <p>Green by Laura Vaccaro Seeger</p>	<p>How do you describe a colour in detail using poetic language and unexpected word choices? Read Green by Laura Vaccaro Seeger to find out.</p>	<p>Ozobots read and react to green. But what kinds of green do they like best? Create a class book about green. Can you find 22 ways to describe green? It's a challenge. Are you up to it?</p>	<p>Janice Novacowski offers different ways to consider patterns. Provide students with a handful of cubes all the same colour. Ask:</p> <p>"Please consider patterns you can create with these cubes."</p> <p>"How can you represent a pattern with just one attribute?"</p> 

Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
Books about Colours ...			
 <p data-bbox="220 570 367 638">Mix it Up By Herve Tullet</p>	<p data-bbox="495 228 810 500">Here's another, creative, interactive book from Herve Tullet. Mixing colours is always a messy delight for young children. Go for it! See what they learn!</p>	<p data-bbox="823 228 1369 386">Little trays of primary colours (maybe outside!) will provide lots of scientific discovery for your students. Write little formulas with painted examples.</p> 	<p data-bbox="1402 228 2007 386">Composing and Decomposing numbers. A quantity of ten can be composed of parts put together to make ten, such as four and four and two. <math>10 = 4 + 4 + 2</math></p> <p data-bbox="1402 415 2007 662">It's important to think about decomposing numbers into more than two parts so that students have a broader understanding of quantities and fluency with decomposing numbers into its multiple parts. Decomposing and composing quantities do not need to be of equal parts.</p>
 <p data-bbox="168 1141 420 1206">Little Blue and Little Yellow by Leo Lionni</p>	<p data-bbox="495 683 810 808">Such a sweet, simple story of colour mixing and the impact of a simple hug!</p>	<p data-bbox="823 683 1369 841">Create a story basket by placing this story and scraps of coloured paper or fabric in your classroom as an invitation for repeated story telling. What new stories will emerge?</p> 	<p data-bbox="1402 740 2007 898">Read the final page of Lio Lionni's book. It's a note to parents and teachers about how he came to write this story from a personal experience with his two grandchildren.</p> <p data-bbox="1402 927 2007 1003">Lots of math to be experienced with tearing and creating using paper discs, squares, triangles...etc.</p>

Book:	Synopsis:	At a Glance ELA Ideas:	At a Glance Math Ideas:
Books about Colours ...			
 <p>One Piece of String by Marthe Jocelyn</p>	<p>One piece of string comes untied from a parcel and changes into a spider's web, a layer of snow on a birdhouse roof, and other surprises.</p>	<p>Make string art on colourful paper. Label images with letters, words, write or tell a story about it.</p>	<p>Comparing lengths of string, ribbon, yarn.</p> <p>Create 2 designs. Compare the length when you straighten the string into a straight line.</p>
 <p>One Red Button by Marthe Jocelyn</p>	<p>One red button falls off a coat and becomes the cherry on an ice-cream cone, the wheel on a fire truck, the jewel in a necklace, and many other round surprises.</p>	<p>This one begs to become a class book ...</p> <p>One red button can be:</p> <p>And each child creates a page! Can't you just see it now?!</p> 	<p>Sorting Buttons from a collection.</p> <p>Exploring a particular button set.</p> <p>Play I-spy to determine a particular button.</p> <p>Sort by different attributes.</p> <p>Colour match</p> <p>Patterning (including positional language)</p>
 <p>Blue Ethel by Jennifer Black Reinhardt</p>	<p>Ethel is old, fat, black, and white. She is also a cat who is very set in her ways...until the day she turns blue! BLUE ETHEL shows us that being different can be a good thing.</p>	<p>Students can create a simple outline of an animal. Using food colouring, colour it in to be a different colour than it usually is. Or maybe it will be a rainbow of colours.</p>	<p>Everyday Ethel when outside to survey the landscape. She buddies up and looks with a different perspectives. "Spatially challenging picture books are those that examine scenes from various angles and perspectives; whose illustrations require close examination to decipher. " Taking Shape This is one of those books!</p> <p>Colourful playful chalk number chalk play outdoors.</p>
Compiled and created by: Debbie Nelson & Carol Walters with Joan Pearce and Kara Dawson ... School District #71 Comox Valley, Vancouver Island, B.C.			



Learn or share this action poem about lines:

<https://www.youtube.com/watch?v=0PgERZ03cXo>

(4:30)

An online song about lines: <https://www.youtube.com/watch?v=DQEVllmeWH4>



## Reproducible 1A

# CMEC statement on play-based learning

### Learning through play is supported by science.

The benefits of play are recognized by the scientific community. There is now evidence that neural pathways in children's brains are influenced and advanced in their development through exploration, thinking skills, problem solving, and language expression that occur during play. Research also demonstrates that play-based learning leads to greater social, emotional, and academic success. Based on such evidence, ministers of education endorse a sustainable pedagogy for the future that does not separate play from learning but brings them together to promote creativity in future generations. In fact, play is considered to be so essential to healthy development that the United Nations has recognized it as a specific right for all children.

### Learning through play is supported by experts.

Learning through play is supported by early years experts. Lev Vygotsky identified play as the leading source of development in terms of emotional, social, physical, language, or cognitive development. Psychologist David Elkind [states] that "play is not only our creative drive; it's a fundamental mode of learning." Such experts recognize that play and academic work are not distinct categories for young children: creating, doing, and learning are inextricably linked. When children are engaged in purposeful play, they are discovering, creating, improvising, and expanding their learning. Viewing children as active participants in their own development and learning allows educators to move beyond preconceived expectations about what children should be learning, and focus on what they are learning.

### Learning through play is supported by children and parents.

Learning through play is supported by children. It is their natural response to the environment around them. When children are manipulating objects, acting out roles, or experimenting with different materials, they are engaged in learning through play. Play allows them to actively construct, challenge, and expand their own understandings through making connections to prior experiences, thereby opening the door to new learning. Intentional play-based learning enables children to investigate, ask questions, solve problems, and engage in critical thinking. Play is responsive to each child's unique learning style and capitalizes on his or her innate curiosity and creativity. Play-based learning supports growth in the language and culture of children and their families.

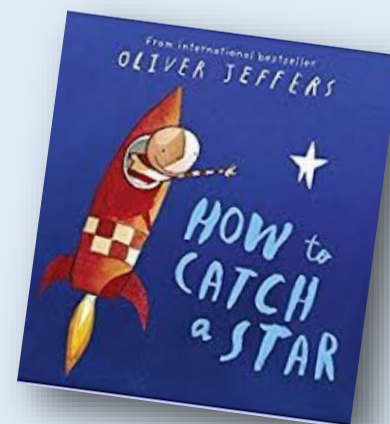
### When children are playing, children are learning.

Given the evidence, CMEC believes in the intrinsic value and importance of play and its relationship to learning. Educators should intentionally plan and create challenging, dynamic, play-based learning opportunities. Intentional teaching is the opposite of teaching by rote or continuing with traditions simply because things have always been done that way. Intentional teaching involves educators being deliberate and purposeful in creating play-based learning environments — because when children are playing, children are learning.

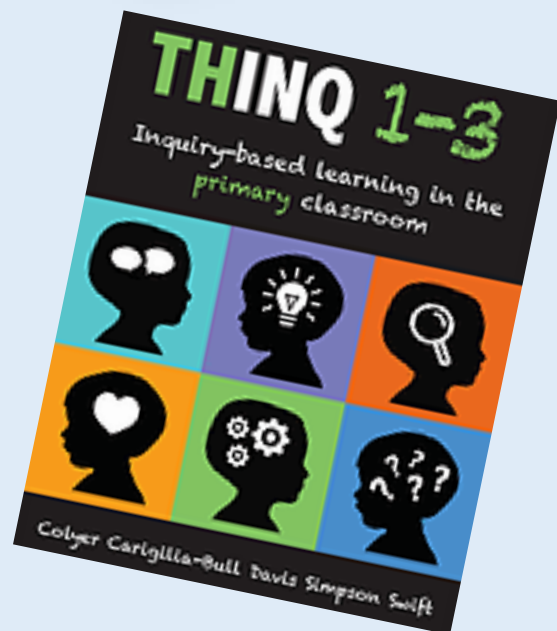
Council of Ministers of Education, Canada,  
*Statement on play-based learning*, 2012.

Years ago, at an Early Years conference in Parksville, Janet Mort shared a brilliant strategy. As groups of teachers worked as teams to develop a way to catch a star, Janet asked that one person in the group record, 'ing' words to capture the essence of what was happening as these teams worked. The following list serves as examples of the learning that takes place as people play:

- Planning
- Talking/communicating
- Problem solving
- Negotiating
- Creating
- Persevering
- Imagining
- Cutting
- Gluing
- Measuring
- Estimating
- Helping
- Sharing
- Waiting/taking turns
- Modifying/tweaking
- Presenting
- Accepting
- Trying/experimenting
- Risk taking
- **PLAYING!!!!!!**



You may want some of your students, or a parent, to collect 'ing' words as they play. What will they see happening?



## 6.3 What is the role of assessment for learning during inquiry?

Assessment for learning improves learning. When educators use assessment for learning, they determine where the learners are in their learning, where they need to go, and how best to get there. Assessment for learning is not a tool: it is a shift in thinking about what matters in schools. It moves the focus from categorizing students to students' learning.

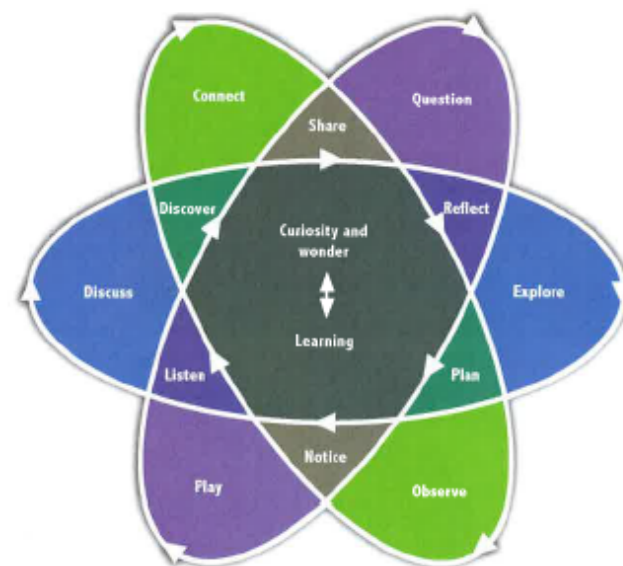
Over and over again, research studies have demonstrated that when formative assessment is well-implemented in the classroom, it can improve student learning. Assessment is a powerful catalyst for learning. Formative assessment can produce huge gains in students' achievement, and is sufficiently vigorous that educators can use it in diverse ways and still get great results with their students.

As children are wondering, investigating, exploring and researching, both educators and children are engaged in reflecting upon information from dialogue, demonstration and observation. They are responding with ideas and feedback that are immediate and directed at learning, in real time.

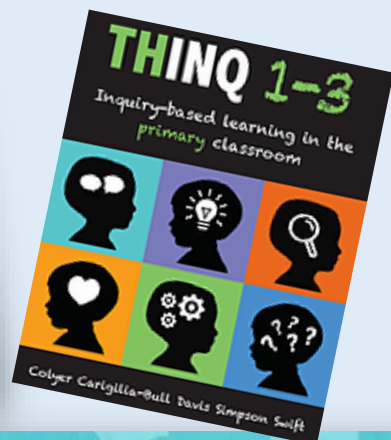
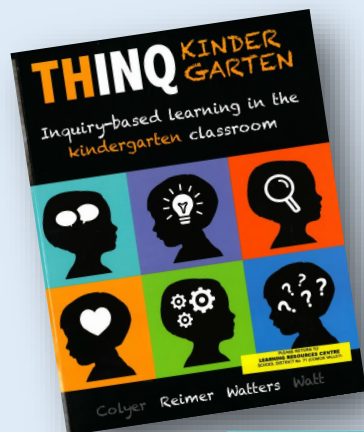
Observation and documentation are the keys to assessment for learning in an inquiry-based kindergarten. In kindergarten, assessment for learning is part of everyday teaching in everyday classrooms. Assessment for learning occurs in real time. Not only is information about learning generated, but also it has the positive effect on the inquiry learner. The learner becomes engaged and motivated to learn.

**Big Idea**  
Assessment for learning is fundamental for improving inquiry learning.

**Confirmation**  
What is your experience with assessment for learning? Have you observed any benefits for young learners?



**FIGURE 6.3** As children and educators cycle back and forth through the inquiry process, assessment for learning is focused on understanding and maximizing learning.



### 3 The environment is the context in which learning takes place.

When we reflect on the fact that kindergarten learners spend a lot of time in their classroom, we can appreciate its importance to and influence on their learning. We want and need the classroom learning environment to:

- provoke curiosity and wonder,
- create a sense of belonging, and
- communicate our beliefs about learners.

Just as importantly, when learners participate in co-constructing the spaces, materials and culture that make up a learning environment, the classroom naturally becomes a richer and more responsive place.

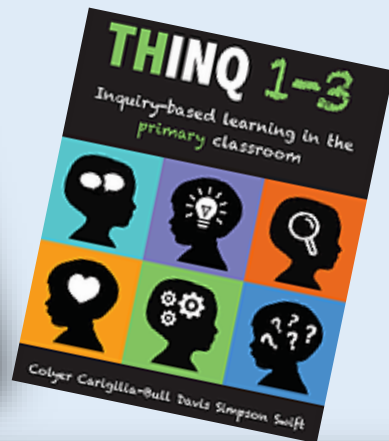
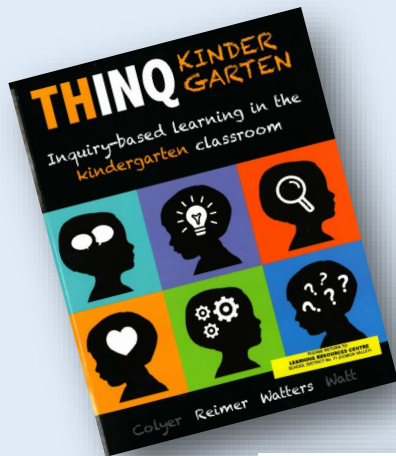


**Context**  
What new ideas do you have about co-constructing a more powerful learning environment for your learners?

**FIGURE 7.6** Co-constructing a learning environment means giving children a say about the "what and how" of space, materials and culture.



**FIGURE 7.7** An inquiry culture has very specific sights and sounds that educators can look and listen for.



## 5 Documentation is a tool to inform teaching and planning in inquiry-based learning.

The most effective way to learn about our kindergarten learners is through observation and conversation. When we observe and talk with students openly and without judgment, we can begin to see and hear what is actually happening in our classrooms. Through the interpretation of collected observations and conversations, we can analyze words and actions and theorize about the thinking and learning that is taking place. This allows us to then respond with intention and purpose, involving learners in gathering and reflecting on documentation gives them a chance to think about their thinking too.

### Confirmation

Who can you work with in your school to explore what documentation tools are most effective and efficient and how can you go about doing it?



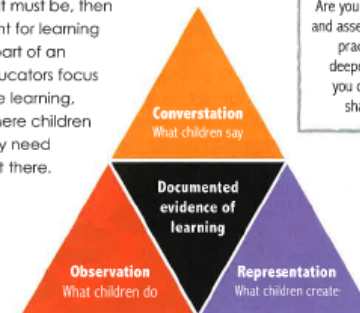
**FIGURE 7.9** There are many different documentation tools and approaches available to educators to help them plan and inform their teaching.

## 6 Assessment is part of our everyday practice with young children.

Educators understand a child's learning by observing, talking and listening to them. If our goal is to improve learning, as it must be, then documentation and assessment for learning must be a daily and ongoing part of an educator's practice. When educators focus on using assessment to improve learning, they gain deep insights into where children are in their learning, where they need to go next and how best to get there.

### Commitment

Are you committed to documenting and assessing your own assessment practice for the purpose of deepening and improving how you can identify, improve and share a child's learning?



**FIGURE 7.10** Inquiry assessment in kindergarten means focusing on what learners are saying, doing and creating.



**FIGURE 7.11** The quality and effectiveness of assessment should be measured not by how much evidence is collected, but by the degree to which it helps improve, summarize and communicate children's learning.



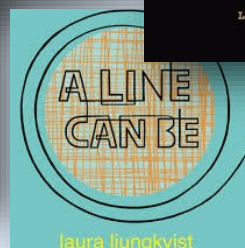
Have fun with an

# OZOBOT



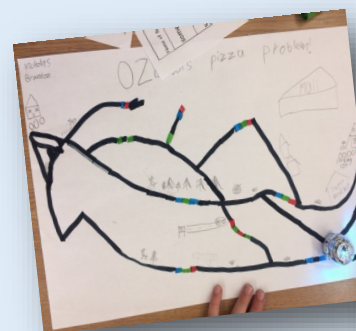
Have fun with colours!

Have fun with books!



Have fun with lines!

Have fun with writing!



Name	Story Framework
Name of Book/Story	Date
somebody	Ozobot
wanted	waited to order pizza from Bydars
but	but they were out
so...	no waiter took home and made his own