

# Grades 2&3 Math Instructional Routines

Instructional routines are inclusive and responsive pedagogical practices that support the development of core and curricular competencies while learning mathematics content. The use of instructional routines as part of your designing for math learning supports the development of mathematical discourse and developing a math community. Specific mathematics curricular competencies that are developed during most math instructional routines include:

- Estimate reasonably
- Demonstrate and apply mental math strategies
- Visualize to explore mathematical concepts
- Use mathematical vocabulary and language to contribute to mathematical discussions
- Explain and justify mathematical ideas and decisions
- Communicate mathematical thinking in many ways
- Reflect on mathematical thinking

## Prompts to support student thinking during math instructional routines:

- What do you notice? What do you wonder?
- How many? How do you see them?
- How do you know?
- What is a different way...?

Each routine could be about 10-15 minutes at the beginning of a lesson to recall and develop math knowledge, practice and use math vocabulary and language through discourse, explain thinking, and building an understanding that math can be creative and approached in many ways.

<b>Routine</b>	<b>Description</b>	<b>Link</b>	<b>Content Areas</b>
<b>Splat</b>	Routine that develops algebraic thinking and solving for an unknown. Students see total number of dots and then some dots are covered by a splat/s with remaining dots visible. Students figure out how many dots are under the splat/s.	<a href="https://stevewyborney.com/?s=splat">https://stevewyborney.com/?s=splat</a>	Algebraic thinking  Connections between multiplication, division, addition and subtraction
<b>Visual Patterns</b>	Students extend a visual growing pattern with pictures or materials, then generalize the pattern rule. In grades 2&3 this patterns can be used for students to copy and extend with concrete materials.	<a href="https://www.visualpatterns.org">https://www.visualpatterns.org</a>	Algebra  Patterning  Application of operations
<b>Counting Collections</b>	A pair of students counts a collection of items in multiple ways (such as by 2s, 5s and 10s) and records the count using pictures, words and symbols.	<a href="https://tedd.org/counting-collections/">https://tedd.org/counting-collections/</a>  <a href="https://blogs.sd38.bc.ca/sd38mathandscience/2015/11/03/counting-collections/">https://blogs.sd38.bc.ca/sd38mathandscience/2015/11/03/counting-collections/</a>	Number, quantity, skipcounting, place value
<b>Choral Counting</b>	As students count a sequence aloud together, such as counting by 5s starting at 50, the teacher records the count in rows and columns and then the students share the different number patterns they see.	<a href="https://tedd.org/choral-counting/">https://tedd.org/choral-counting/</a>	Number, quantity, skipcounting, place value, number patterns
<b>Number Talk Images</b>	Students determine how many items are in an image and explain how they know and different ways of seeing the quantity.	<a href="http://ntimages.weebly.com/photos.html">http://ntimages.weebly.com/photos.html</a>	Number and quantity  Application of operations

<b>Estimation 180</b>	Students investigate an image and estimate how many/how much/how big, etc and consider a reasonable range of estimates.	<a href="https://estimation180.com">https://estimation180.com</a>	Estimation Number and quantity
<b>Estimation Clipboard</b>	Students estimate the quantity or measure of different items through four sets of images.	<a href="https://stevevyborney.com/2018/04/the-estimation-clipboard/">https://stevevyborney.com/2018/04/the-estimation-clipboard/</a>	Estimation Number and quantity
<b>Same but/or/and Different</b>	Students compare two images and discuss how they are the same and how they are different.	<a href="https://samedifferentimages.wordpress.com/about/">https://samedifferentimages.wordpress.com/about/</a>  <a href="https://www.samebutdifferentmath.com">https://www.samebutdifferentmath.com</a>	Images available for all content areas
<b>WODB</b>	Student compare four items/images and discuss how they are the same and also try to decide which one is the most unique and why.	<a href="https://wodb.ca">https://wodb.ca</a>  <a href="https://talkingmathwithkids.com/wodb/">https://talkingmathwithkids.com/wodb/</a>	Geometry – 2D shapes  Number and quantity
<b>Clothesline Math</b>	Students order and compare numbers by placing tent cards along a clothesline or interactive number line.	<a href="https://clotheslinemath.com/numbers/">https://clotheslinemath.com/numbers/</a>  <a href="https://kristenacosta.com/clotheslines/">https://kristenacosta.com/clotheslines/</a>	Numbers
<b>Slow Reveal Graphs</b>	Layers or components of a graph are slowly revealed as students make sense of the visual representation of data.	<a href="https://slowrevealgraphs.com">https://slowrevealgraphs.com</a>	Data  Graphing  Comparing quantities and measurements
<b>Open Middle</b>	Open problems and tasks using the digits 0-9  Note: French student recording sheet available	<a href="https://www.openmiddle.com">https://www.openmiddle.com</a>	Number concepts and operations  Geometry Probability

## Coast Metro Elementary Mathematics Project: Instructional Routines

<https://coastmetro.ca/elementary-math-project/instructional-routines/>