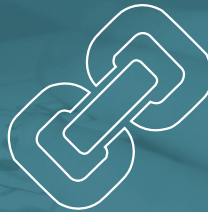


Viewers' Guide

SUPPORTING STUDENTS WITH LDs IN A  
**COMPREHENSIVE  
MATH PROGRAM**





# Supporting Students with LDs in a Comprehensive Math Program

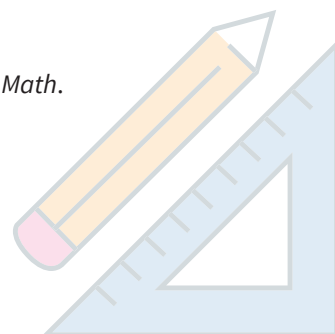
## Viewers' Guide

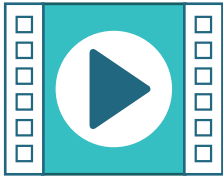
All students have the capabilities to learn and achieve success in math, including students with learning disabilities (LDs). A comprehensive math program engages all learners through deep learning, innovative teaching and sound assessment. Educators need to be familiar with each student's learning profile to help determine the appropriate instructional and assessment strategies, and to provide appropriate accommodations, including technology.

This guide provides viewers with the opportunity to explore how the York Region District School Board created a comprehensive math program to support and enhance the math outcomes for all students, including students with LDs. Specifically, York developed and implemented a comprehensive math program that includes the environment, the learner and the learning experience. Through the various activities in this guide, viewers are able to reflect on their thoughts and practices related to mathematics learning for students with LDs.

### This viewers' guide includes the following sections:

- **True or False: Statements about LDs and Math** is an activity that tests individuals' knowledge on learning disabilities in relation to math prior to watching the video, and allows viewers to reconsider their responses after watching the video.
- **Elements of a Comprehensive Math Program** is a viewing activity that allows viewers to record concepts related to each element of a comprehensive math program discussed in the video – the learner, the learning environment, and the learning experience.
- **Elements of a Comprehensive Math Program – Applied** is an application activity where viewers reflect on how they are currently supporting students in each element of a comprehensive math program, and how they can enrich each area.
- **Roll the Dice** is a takeaway activity that can be used with students to work on numeration, the act of calculating or assigning a number to something.
- **Appendix A** identifies key messages from the video that a facilitator may use to initiate additional discussions and to ensure that all key concepts are understood.
- **Appendix B** includes the answer key to the *True or False: Statements about LDs and Math*.





# True or False: Statements about LDs and Math

## Pre-viewing and Post-viewing Activity

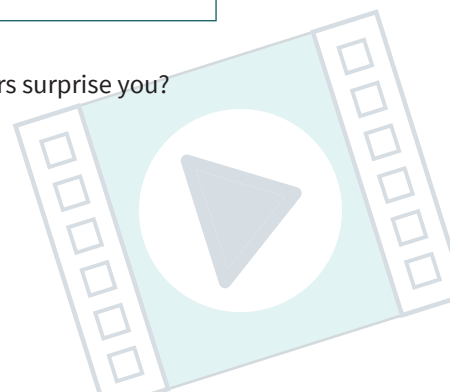
Prior to watching the video, read each of the 8 statements about learning disabilities and math, then in the first column circle either “true” or “false”. Once you have viewed the video, return to this activity and read each statement again – in the last column, and reflecting on the content of the video, circle either “true” or “false” again.

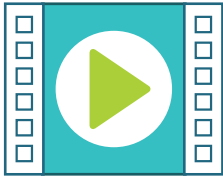
	Pre-viewing	Statement	Post-viewing
	True False	<i>Example statement</i>	True False
1	True False	Students with a math learning disability should not be allowed to make mistakes.	True False
2	True False	Students with a math learning disability do not need accommodations, just more drill and practice.	True False
3	True False	Students with a math learning disability can all benefit from the same accommodations.	True False
4	True False	Math anxiety is real, for students with and without LDs.	True False
5	True False	Instructional accommodations should also be used for assessment and recorded in the IEP.	True False
6	True False	Students with a math learning disability always have social or emotional issues.	True False
7	True False	Math manipulatives are only for use with younger students.	True False
8	True False	Evidence-based and research-informed strategies help all students, including those with LDs.	True False



How did your answers compare after watching the video? Did any of the answers surprise you?

Share your thoughts with an elbow partner.

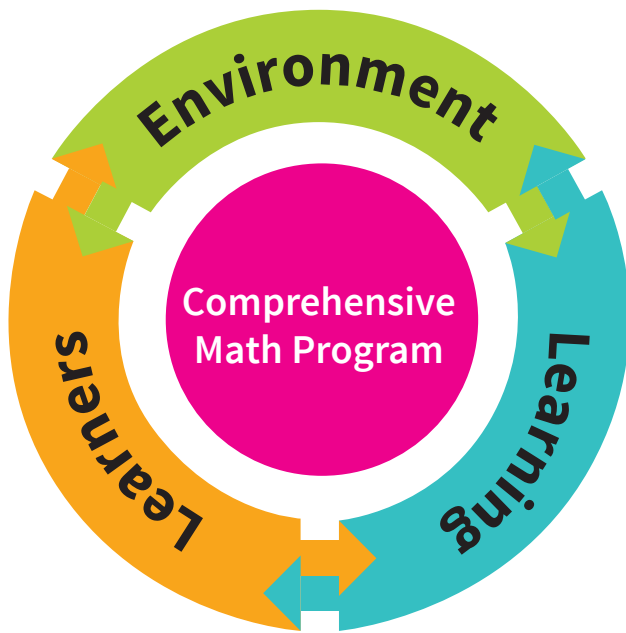




# Elements of a Comprehensive Math Program

## Viewing Activity

While watching the video, use the graphic organizer below to record key concepts for each component in a comprehensive math program – *The Environment*, *The Learners*, *The Learning*.



### ➔ The Environment

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### ➔ The Learners

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### ➔ The Learning

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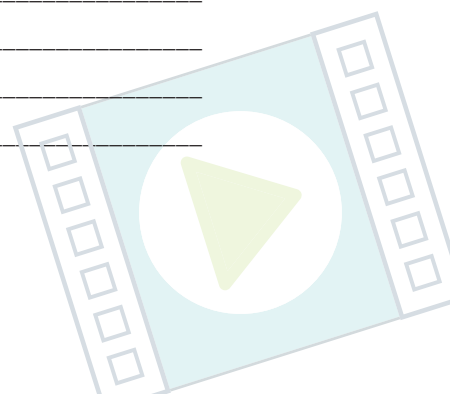
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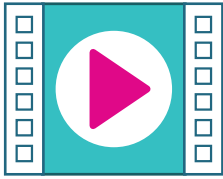
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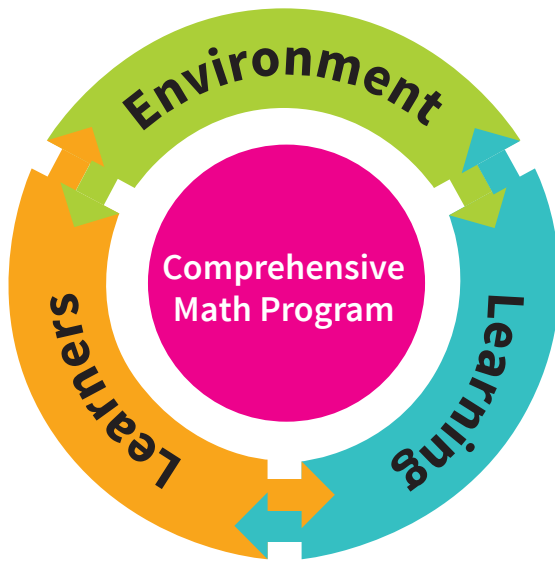


# Elements of a Comprehensive Math Program Applied

## Application Activity

After watching the video, think of a student (or group of students) with learning disabilities in your math class. Under each element of the comprehensive math program, list how you are supporting the student or group of students.

Take time to reflect on any gaps; is there one component that is not being addressed? After reflection, go back to each component and list all the ways the activity could be modified to better address that component. List these ideas under “What else could I do to enrich this component?”.



### ➡ The Environment

*“What am I doing now? What else could I do to enrich this component?”*

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### ➡ The Learners

*“What am I doing now? What else could I do to enrich this component?”*

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### ➡ The Learning

*“What am I doing now? What else could I do to enrich this component?”*

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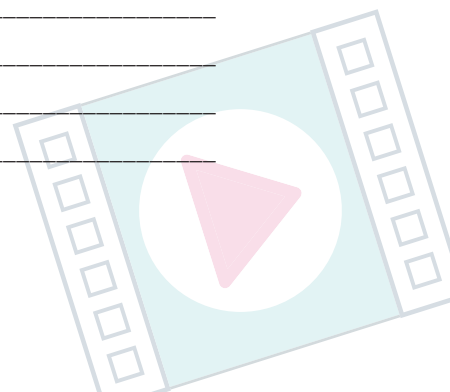
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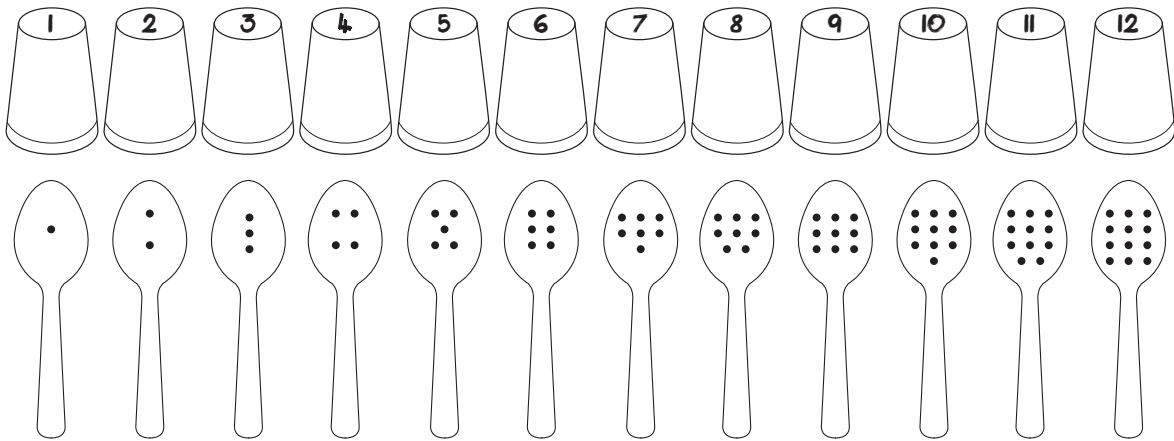
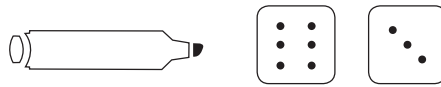


# Roll the Dice

## Takeaway Activity

While watching the video, you may have observed students engaged in a dice activity. Below is a lesson plan that outlines this activity, which you can use when your students are working on numeration, calculations or assigning quantities.

### Materials:



- 1 marker
- 2 dice
- 12 disposable cups
- 12 disposable spoons

### DIRECTIONS:

#### Creating the Game

1. On the bottom of each cup, write the numbers 1 to 12. Each cup should only have one number written on the bottom, as seen in the image above.
2. On the front of each spoon, draw dots to represent the numbers 1 to 12, as seen in the image above.
3. Place all cups facedown on a table or flat surface, in a row, so that each number written on the bottom of the cup is visible. Place spoons directly below in a similar fashion.



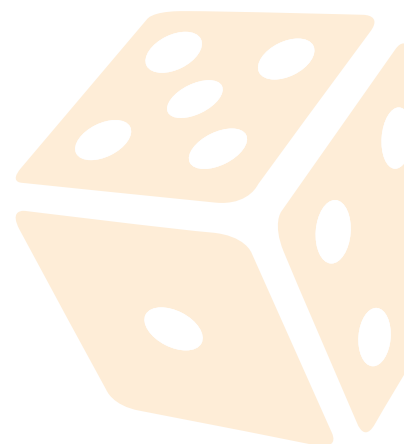
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## Playing the Game

1. Roll both dice and ask the student to add the numbers shown on each die together.
2. Find the sum of the dice represented on the cup as a number, and on the spoon as dots.
3. Continue to roll the dice, calculate, and find the matching cup and spoon.

## Strategies to Support Students

1. Model how to play by going first. Demonstrate and explain your approach.
2. If a student is having difficulties counting, have them to use their finger to count the dots on the dice and spoons.
3. Start by putting the cups and spoons in ascending order.
4. Play with only one die until students are comfortable with the representations of numbers 1-6. To build up gradually, fix one die to a low number and roll the other die. This helps them consolidate addition facts as well.





## Appendix A:

### Key Messages

- Students with LDs have the potential to learn and achieve success in math.
- A comprehensive math program engages all learners through deep learning, innovative teaching and sound assessment.
- Creating a positive environment that allows students to feel safe, to make mistakes and accommodates their learning styles, is important in mathematical learning, especially for students with LDs.
- Educators need to be familiar with each student’s learning profile, including strengths and needs.
- Students with LDs may need individualized accommodations for instruction and assessment/evaluation; these accommodations must be included in the IEP.
- There are many technological tools available, for use at school and at home, that can support mathematical learning.
- Educators can improve the learning experience for students with LDs through the design and delivery of mathematical content that will allow students to develop key skills, such as problem solving.
- Collaboration among educators and data-driven decision making contribute to a successful comprehensive math program.
- With innovative strategies, individualized accommodations, an understanding of what learning disabilities are, and what supports are available inside and outside the classroom, all students, including those with LDs, can learn and do math.





## Appendix B:

### Answer Key to True or False: Facts about LDs and Math

	Pre-viewing	Statement	Answer
1	True    False	Students with a math learning disability should not be allowed to make mistakes.	True <b>False</b>
2	True    False	Students with a math learning disability do not need accommodations, just more drill and practice.	True <b>False</b>
3	True    False	Students with a math learning disability can all benefit from the same accommodations.	True <b>False</b>
4	True    False	Math anxiety is real, for students with and without LDs.	<b>True</b> False
5	True    False	Instructional accommodations should also be used for assessment and recorded in the IEP.	<b>True</b> False
6	True    False	Students with a math learning disability always have social or emotional issues.	True <b>False</b>
7	True    False	Math manipulatives are only for use with younger students.	True <b>False</b>
8	True    False	Evidence-based and research-informed strategies help all students, including those with LDs.	<b>True</b> False





## Thank You

Thank you for watching *Supporting Students with LDs in a Comprehensive Math Program* and for using this viewers' guide.

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At this time, we invite you to share your thoughts and comments relating to this video; the feedback we receive will assist in the development of future videos and future content for the LD@school website. Please click here to share your thoughts and comments by completing our short survey:

[https://www.surveymonkey.com/r/video\\_CMP\\_2018](https://www.surveymonkey.com/r/video_CMP_2018)

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