Educating Young Men

Language Arts/Mathematics

Grades 8 Resource- Unit 1
Young Men’s Leadership Academy
Academic Philosophy

Our philosophy is built upon research that indicates that boys and girls learn differently. We recognize that boys have varied academic, social, and emotional needs. We will address those needs through instruction that is tailored to the male learner and delivered in an environment that promotes academic success while instilling a strong culture of brotherhood and camaraderie.
The goal of educators is to provide equitable learning opportunities for all students in the classroom. Research indicates that boys and girls develop literacy skills differently; resulting in disparate academic outcomes. As a result, providing equitable access to positive classroom experiences is an issue that has increased in urgency.

Current research reports consistent findings:

- Gender is a significant factor in both reading materials and reading achievement for boys and girls.
- On the US National Assessment of Educational Progress (NAEP), boys have scored significantly lower than girls in reading at all grade levels every year since 1992 (the first year NAEP scores were available).
- Boys are more likely than girls to be placed in special education programs.
- Boys are less likely than girls to go to college.
- Dropout rates are higher for boys than for girls.

What causes this achievement gap? Researchers argue that the gender gap originates in biological, developmental, or environmental differences between boys and girls. Offering yet another perspective, sources such as ASCD and Psychology Today propose that the gap may be due to the way literacy is taught; suggesting that educational strategies that are more mindful of the way male brains develop would help close the gap.

What can educators do?

Encouraging news is that none of the findings above are irreversible. Recent studies focused on how boys learn suggest that if their academic needs are properly addressed, boys can obtain academic success equal to their female counterparts. A key component of their academic success lies in ensuring that boys are provided with classroom experiences that address their interests, needs, and learning styles.
Teaching Young Men

Boy Smarts
Boys are the masters of minimalism and the practitioners of “just-in-time” management. Asked to do almost any task, their mediate response is “later”. If they are asked to write a 50-word essay, they will count the words, and if they write 51 words most them will think they have overdone it. If you have predominantly boys in your class, there are a number of things that you can do to improve behavior and learning. These methods are likely to work with the majority of boys.

Respect
Boys are constantly checking to see if you respect them. They respond well to people who have expectations of them and respect them as capable of meeting those goals. As the TV character Ali G. would say, “respect!” If a boy has a sense that you respect him, he will walk over coals for you. Never ask a boy who is a poor reader to read out loud in front of his peers. He will be humiliated and will never do anything for you ever again.

Give clear signals about who is in charge
Boys need boundaries. They need to know who is in charge here. They respond to teachers who are fair, funny and respect their intents of view, and they generally do better with teacher-led learning. Open spaced learning areas where no one clearly owns the ace can be quite anxiety provoking for boys, and that anxiety converts into expressions of low motivation and clowning type behaviors.

Give a physical signal when you want silence
Boys need more signals than girls partly because they are less tuned into facial cues. Boys are more able to screen out white noise. (Teachers requesting quiet equals white noise!) Therefore, deliver instructions in silence. Use visual cues, raising hand, turning hts off and on, and moving to a particular part of the room. Never, ever yell.

WER rules and fewer words is better
Give a couple (no more than three) clear rules that you apply fairly and consistently. Base your classroom management on the idea of “I won’t let this happen to you, and I won’t let you do it to anyone else”. During instruction, use a backup visual that you can int to for boys who have difficulty listening.

Value them and they will be heroes
Boys are tuned into hierarchies. This means the predominant values of a classroom, family or school will play a powerful role in determining their actions. Have a couple of core values (e.g. compassion, generosity, being part of a team). Live by them and insist on them. Help boys to learn that they can be heroes and victorious but that winning doesn’t mean someone else has to lose.

**The knowledge from computer games as an inspiration for learning**

Boys’ attraction to competition will override almost any disadvantage or loss of motivation. They generally love competitive games, especially when there is not an ultimate winner. Quick fire quizzes with several rounds are a successful way of engaging boys. Computer game designers have cleverly used the principles of engagement to captivate boys:

- Make success challenging but attainable by breaking it down into stages.
- Make success more likely than failure, the most motivating games have players succeed about 80% of the time, initially, before building up to 100% before moving to the next level.
- Give people the opportunity to try again.
- Try to create a sense of moratorium where boys and girls can try to out new activities in a setting where there are no consequences.
- Use lots of movement.

Pay attention to less competitive, sensitive boys. Assisting them to attain personal bests can be useful. Give boys more time to answer and to assemble the words and give them a chance to phone a friend (the friend cannot answer the question but can make helpful suggestions).

**Love regularly**

Teaching boys is like being a cross between a matador and a traffic cop. Keep on the move and mingle with the crowd. Boys see things best in motion. Use visuals and animations as often as you can. As James (2009) notes, boys love targeting. If you have ever watched boys place rubbish into bins you will see that they don’t place it, they take a shot. For this reason, movement and aiming to achieve a set target are powerful strategies with boys.

**Control where they sit**

Move boys who do not appear to be paying attention to the front. Proactively shift the seating of boys who seem unsettled or distracted. They will often be playing up to impress their local audience. Boys need quiet times in order to reflect and re-energize, girls need quiet times to think, read and at times, quietly chat with others.

**Now about anger**

Anger and shame can stop boys’ learning, and once boys are angry, it is harder for them to get over it. If they feel you are going to shame them in front of their peers, they will fight you tooth and nail. Most boys will do silly, self-defeating things rather than lose
The respect of their peers. Take your sail out of their winds. Deal with issues at a time of your choosing not when the boy wants to deal with it. There are also decision-making differences between girls and boys when involved in dispute resolution. Girls are often able to see the effect of their actions on other students, so asking “how do you think she felt?” type questions may pay off. In contrast boys may be less cued into other students’ emotions and a more successful strategy may be reinforcing a rule such as, “I wouldn’t let him do that to you, and I’m not going to let you do it to him”.

Boys are loyal and funny
Boys love the inside word; the cheat sheet and they love to score. Giving them hints suggestions and a way to succeed builds their loyalty to you. Boys buy popularity through achievement, jokes and skills. Humor is an essential quality.

Boys generally learn through doing- thinking- talking
Boys like movement and are generally more active than girls. They are also more concerned with performance. While some boys will be inherently interested in the material, almost all boys engage when there is a competitive spirit. The more that you mimic a game show format the more boys will be engaged.

Give them a whiff of success
Most men and boys waste an incredible amount of time completing tasks that don’t need to be done and avoiding tasks that don’t need to be avoided. Help them to structure tasks and to improve on early attempts so that they gain mastery and success. Once a boy believes he can be successful, he’ll almost always live up to it.

Extracted from the Brain Based Learning Manual Copyright Andrew Fuller
Teaching Young Men
Teaching Young Men
According to the Ontario Ministry of Education, boys respond well to real-world themes that offer them authentic learning experiences, that is, experiences they have had or could have in their own lives. Exploring real-world themes typically involves a combination of resources and activities. Real-world themes have a clear focus on one or more meaningful, key concepts and authentic learning experiences that involve both direct instruction and students’ discovery of things on their own.

In addition to authentic real-word experiences, students need opportunities to engage in courageous conversations about race and discrimination. This work is critical for students and teachers to engage in because outside school experiences are quite inconsistent with the expectations that are inside of school. It is the school’s responsibility to take on the onus of understanding what students experience outside of school.

For example, if students read particular kinds of books outside of school, and if they engage in social media outside of school, teachers must figure out how to utilize that as an anchor for what happens inside of school. It is the teacher’s responsibility to develop other lenses to understand what’s happening with the student outside of school so that he or she can be responsive to that reality. When teachers and students engage in courageous conversations within the classroom, it is imperative that all members are aware of the four agreements.

The Four Agreements of Courageous Conversations:

1. **Stay engaged:** Staying engaged means “remaining morally, emotionally, intellectually, and socially involved in the dialogue.”
2. **Experience discomfort:** This norm acknowledges that discomfort is inevitable, especially, in dialogue about race, and participants make a commitment to bring issues into the open.
3. **Speak your truth:** This means being open about thoughts and feelings and not just saying what you think others want to hear.
4. **Expect and accept non-closure:** This agreement asks participants to “hang out in uncertainty” and not rush to quick solutions, especially in relation to racial understanding, which requires ongoing dialogue (pp.58-65).
Unit 1
**Critical Literacy**

Critical-literacy is the practice of exploring and discussing the underlying assumptions in texts or works in other media. It is a powerful tool for helping boys “read” their world. When boys are critically-literate, they become aware of how various texts portray individuals, groups and situations. The work involved in critical-literacy makes sense to boys and appeals to their enjoyment in making things out. In teaching critical-literacy skills, it is essential that educators be prepared to welcome intellectual challenges. For many boys, intellectual sparring is a way of showing their interest and engagement in a subject. (Ontario Education, 2004)

<table>
<thead>
<tr>
<th>SLO/NJSLA</th>
<th>Strategy</th>
<th>Resource</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLSA.R1.</td>
<td><strong>Read Between the Lines:</strong> Examine underlying meaning in a text, consider the purpose of a text and the author’s motives for writing it, analyze the power of language and persuasion, explore interpretations of the text made by the readers, explore and clarify personal values in relations to a text.</td>
<td>Novel: <em>The Outsiders</em></td>
<td>Choose text that inspires discussion. Start with an overarching question. During discussion, send students back to the text for more evidence by prompting them to expand on a classmate's idea or deepen the discussion. Prompt students by saying, “I heard this person say something that contradicts …” or “The students all said something similar … does anyone have a different idea?”</td>
</tr>
<tr>
<td>LO: L.8.1.</td>
<td><strong>Explore Masculinity and Gender Roles</strong> Focus discussions on investigation of masculinity; examine how masculinity is portrayed in text; explore what meanings are associated with</td>
<td>Magazines, newspapers articles/current events aligned to the theme presented in <em>The Outsiders</em> (conflict between social classes, stereotypes, gender) Graphic Organizers Highlighters Magazines Movie clips</td>
<td></td>
</tr>
</tbody>
</table>

---

**The Outsiders:**

At the beginning of the novel, Ponyboy points out the many...
being a boy at school and a man in the wider community

Special Education:

While the discussion of how masculinity is portrayed in text, it is often difficult for special education students to make those visualizations in their heads without schema. To assist in visual cues, it would be advantageous to show clips from the movie or visual posters of the characters. The characterization of Ponyboy, “light-brown, almost red hair and greenish-gray eyes” and “wears his hair longer than the other boys wear theirs, squared off in the back and long at the front and the sides” does not allow the reader in 2018 to understand the visual of that description to portray masculinity in 1967. Understanding time periods is crucial to making the connection. Photos of young men from different time periods and comparing and differences between the two groups. He describes the Soc as “jet-set, West-side rich kids” (Hinton 2). He goes on to explain, “We’re poorer than the Socs and the middle class. I reckon we’re wilder, too. Greasers are almost like hoodlums” (Hinton 3). It is easy to see that there is a strong rift between these two groups, but after Ponyboy actually meets some Socs, he begins to question if they’re really that different at all. He says, “They liked the Beatles and thought Elvis Presley was out, and we thought the Beatles were rank and that Elvis was tuff, but that seemed the difference to me” (Hinton 37). The scheme of things, this one line may seem somewhat insignificant, but in actuality speaks volumes about the true differences between the greasers and the Socs. Yes, they are both groups of men, but the greasers and Socs represent two completely different sides of the gender spectrum. Consider engaging students in a close read based on essential
contrasting will help the young reader to find the similarities and be able to form opinions for debate.

Identify the organizational structure of the book. Have students identify how the book was written and point of view.

questions that explore masculinity such as:
1. “How are particular versions of masculinity displayed in text?
2. “How are particular versions of masculinity produced and disseminated in the novel as well as in popular media?
3. Consider having students discuss the relationship between representations in text, popular culture, and students’ personal experiences of being male.

The morning after Ponyboy comes home following his and Johnny’s running away has affected gender roles and the modified roles Ponyboy and his brothers take on now that they are orphans. “The first one up has to fix breakfast and the other two do the dishes. That’s the rule around our house […]” (Hinton 104)
Ponyboy and his brothers have lost their parents and live on their own, and their home situation is anything but typical. Ponyboy states that the first brother awake must make breakfast and
continues to describe what each brother prefers for their meal, and the other brothers will clean up after. These tasks are typically seen as the duties of a female, and in particular, a mother. The mother, especially in a time frame such as in *The Outsiders*, would be the first awake to make breakfast, and would wash the dishes and clean the house after. But because there is an absence of a mother figure in the boy’s lives, they have replaced the duty from a mother to the earliest woken brother. Later on, in the chapter, it is shown that Dally does the laundry/ironing for the brothers, further indicating the switching of duty. The gender roles have a fluid state for the Curtis boys in *The Outsiders*. Consider engaging students in a close read based on exploration of gender roles as presented in Chapter 7.

Possible essential questions might include:
1. What assumptions about gender are presented in *The Outsiders*?
2. How do those assumptions compare to your assumptions about gender roles?

Special Education:
Graphic organizers for answering question and photo to group the pictures within organizers. Cloze frames for completing the response. The assumptions about gender presented in Chapter 7 are______. The characters' physical appearance set them apart because______, assumptions are based on______, and I believe they are similar/different because______.
**Language Arts**  
**Grade 8**

*Teaching:* Some boys need to talk through their ideas before they can commit their ideas to paper. Failure to provide time for this component, for the opportunity to verbalize ideas before reading or writing about them, can create a problem for some boys. (Ontario Education, 2004)

<table>
<thead>
<tr>
<th>SLO/NJSLA</th>
<th>Strategy</th>
<th>Resource</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSLSA.R3:</td>
<td>Let Them Talk:</td>
<td>Novel: <em>The Outsiders</em> excerpts, paired text</td>
<td>Have students engaged in shared reading and discussion to analyze what the actions and dialogue reveal about the characters and their relationships.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soliciting a Response teacher moves: What do you think? We haven’t heard from you yet. Do you agree? What answer did you get?</td>
<td></td>
</tr>
<tr>
<td>L.O: L.8.3. Analyze how particular episodes of dialogue or incidents in story or drama propel the action, reveal aspects of a character, or provoke a decision.</td>
<td></td>
<td>Discussion stems:</td>
<td>After a close read of excerpts from chapter 1 and 2 students can work in groups to answer the essential question: “How does the relationship between Dally and Ponyboy and Ponyboy and Sodapop differ? Are these relationships a realistic representation of sibling brotherhood? Possible Essential Question for Chapter 7: What does...</td>
</tr>
<tr>
<td></td>
<td>● Allow students to engage in shared reading, group work and Literature circles when appropriate.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students should have been previously exposed to the quotes on the page they would like to discuss in the group.

<table>
<thead>
<tr>
<th>I’m confused. What did you mean when you said _____?</th>
</tr>
</thead>
<tbody>
<tr>
<td>On page ____, it says __________________, so I think _______.</td>
</tr>
</tbody>
</table>
| I understood that you said _____.
| May I point out _____? |
| I would like to add ______.
| Do you mind explaining _____? |
| Could you please tell me more about _____? |

Special Education Questions and sentence stems should be pre-taught for engagement in the group discussion. Stick with explicit stems for practice: I agree with____
I believe____

**Language Arts**

**Grade 8**
**Theory:** The arts, music, drama, art and design can be used to explore ideas, convey meaning and extend understanding. For boys means of making meaning visible and increasing their understanding and enjoyment of what they read. (White 2001 p3) states there are many benefits to integrating the arts into language and literacy. Drama is a powerful motivating tool for learning, developing children’s understanding of themselves and the world as well as their communication skills. (Northern Ireland Education & Library Board.)

<table>
<thead>
<tr>
<th>SLO/NJSLA</th>
<th>Strategy</th>
<th>Resource</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLSA.R2.</td>
<td>Embrace the Arts</td>
<td>Use the arts to bring literacy to life.</td>
<td>The Outsiders, short stories The following are some of the ways in which games and role play can enhance pupil’s understanding of stories, novels and other texts. 1. <strong>Role playing:</strong> Pupils take the roles of characters in a text. 2. <strong>Dramatic play:</strong> Pupils use situation from a text as a springboard for creating their own story or drama. 3. <strong>Guided imagery:</strong> Pupils asked to imagine scenes, and subsequently write about or visually depict them. 4. <strong>Snapshot drama:</strong> Pupils asked to depict a moment from the text as a “freeze frame”, particularly as a way of describing characters’ expressions and gestures at a moment. **</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. <strong>Analogy drama:</strong> Pupils create a story from their own lives that parallels a situation in a text.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. <strong>“To tell the truth” game:</strong> In the television show of the same name, a few pupils, each of whom is depicting the same character from a text, are graded by a panel that ultimately determines which pupil has most convincingly “become” the character.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. <strong>Correspondence:</strong> Pupils write letters, diary entries, and advertisements in the roles of various story characters.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. <strong>Missing-scene scripts:</strong> Pupils write scripts for scenes that, while suggested in a text, were not explicitly described.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. <strong>Newscast:</strong> Pupils produce a news broadcast based on characters and events in a text.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special Education:**
- Create an animation using pictures from introductory lesson.
- Create a PowerPoint or Prezzi character and quotations to identify that character.
Paired activity: Trace another student’s body. Design the body using the description from previous lessons. Use words or quotes from the book to depict his personality.

Consider a performance task where your students produce newscasts based on characters and significant moments in The Outsiders. Significant moments include but are not limited to:

1. The SoCs jump Ponyboy on the way home from the movies.
2. Ponyboy and Johnny have a confrontation with the SoCs.
4. Ponyboy and Johnny save some children from a fire.
5. Dally robs a store and gets killed by the police.

Special Education:
Have a Special Education student be the person being...
interviewed while another student asks the interviewee questions.
Competitive learning includes classroom debates, content-related games, and goal-oriented activities; these are often essential for boy-learning and highly useful for the life success of girls, too. Games give students opportunities to explore fundamental concepts and strategies. Engaging mathematical games can also encourage students to explore important mathematical concepts. Furthermore, they afford opportunities for students to deepen their mathematical understanding and reasoning. Teachers should provide repeated opportunities for students to play games, then let the mathematical ideas emerge as students notice new patterns, relationships, and strategies.

<table>
<thead>
<tr>
<th>SLO/NJSLA</th>
<th>Strategy</th>
<th>Resource</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LO #1:</strong></td>
<td>Gamify lessons: appeal to the gaming culture by writing instructions for games and offering students the opportunity to respectfully compete with each other.</td>
<td>Integer Exponent Bingo: Bingo Cards, Bingo Call Problems, Counters</td>
<td>Integer Exponent Bingo</td>
</tr>
<tr>
<td>SLO/NJSLA: 8. EE.A.1</td>
<td><strong>Experiment with peer teaching:</strong> embrace student vocabulary and math discourse by allowing them to teach each other through hands-on, discovery-based activities.</td>
<td>1. Teacher presents Integer Exponent problems one at a time. 2. Students simplify each problem, find the answer on their Bingo board and put a counter in the space. (Provide students with the simplified problem) 3. When a student completes five in a row vertically, horizontally, or diagonally, they say, “Bingo!”</td>
<td></td>
</tr>
</tbody>
</table>
expressions. For example, $3^2 \times 3^{-3} = 3^{-1} = 1/3 = 1/27$.

**ISLA: 8.G.C.9**

- Now the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

**Special Education Strategies:**

- Give each Special Education student a notebook of skills needed to be successful. Access to formulas, definitions and application of process is paramount for academic success.
- Students should have color coded study cards with formulas for volumes of cones, cylinders, and spheres and how to use them.
- All prerequisite skills must be reviewed and printed.

4. First person to reach Bin wins the game.
Theoretical Framework: Competitive learning includes classroom debates, content-related games, and goal-oriented activities; these are often essential for boy-learning and highly useful for the life success of girls, too. Games give students opportunities to explore fundamental concepts and strategies. Engaging mathematical games can also encourage students to explore important mathematical concepts. Further, they afford opportunities for students to deepen their mathematical understanding and reasoning. Teachers should provide repeated opportunities for students to play games, then let the mathematical ideas emerge as students notice new patterns, relationships, and strategies.

<table>
<thead>
<tr>
<th>SLO/NJSLA</th>
<th>Strategy</th>
<th>Resource</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>LO #6: Graph proportional relationships, interpreting slope as unit rate, and compare proportional relationships, each represented in different ways.</td>
<td><strong>Gamify lessons:</strong> appeal to the gaming culture by writing instructions for games and offering students the opportunity to respectfully compete with each other. <strong>Experiment with peer teaching:</strong> embrace student vocabulary and math discourse by allowing them to teach each other through.</td>
<td><strong>Taking its Toll Activity:</strong> Taking Its Toll Activity Sheet, Pennsylvania Turnpike Tolls Overhead, State map, Computers with Internet access, Web site address for state toll road(s), Calculator, Graph paper, Rulers.</td>
<td><strong>Taking its Toll Activity</strong>&lt;br&gt;1. Present the “Exit Fares on the Pennsylvania Turnpike” an overhead.&lt;br&gt;2. Assign students to groups of three. Make all materials easily accessible and designate one member to get the Taking Its Toll Activity Sheet, while another member gets...</td>
</tr>
</tbody>
</table>
graph. Compare two different proportional relationships presented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.

**Special Education Strategies:**

Pair students with stronger students.

*Special Education students could be given the task to bring toll recorder on the Toll Recording Sheet.

3. Students should then gather data for the Toll Data Recording Sheet in either of two ways:
   a) Many states include toll calculator for the turnpike on a web site. These calculators give both the amount of the toll as well as the distance between toll plazas. Use a search engine to find your state’s turnpike web site; then, use the toll calculator to gather data, or allow students to use the web site to gather data on their own.

   b) Alternatively, students can use the state’s toll ticket in conjunction with a state map to find
the necessary information. The ticket will provide toll information, and the map will provide distance. Discuss with students how to determine the necessary information from the ticket. There may be different tolls for travelers depending on the state vehicle classification system that is used.

4. Have the students work together in their groups on the student activity sheet. If necessary, have them record data on the last page of the activity sheet, or have them enter the information into the Toll Data (Excel) Spreadsheet.

5. The first column is only needed to identify each exit. In the second column, students should record the total distance from the start of the toll road. This information may be easily obtained if the exit numbers correspond to mileage; if not,
students will need to determine this information from another source. In the third column, students should record the cumulative toll.

**Special Education:**
Provide Special Education with the data for Toll Data Recording Sheet.

6. Beware of common student errors when recording data. Computation errors often occur in the third column. In addition, some plazas do not have a toll, so students may be confused as to how the cumulative total is affected. Be sure that students verify their data before proceeding.

7. Using their data, students should then create a scatterplot. Students can create this scatterplot on the graph of Question 3 of the Taking It Toll activity sheet, or you may wish to have them use the chart feature if they entered their in a spreadsheet program.
Special Education: Provide students with large graph paper for ease of recording.

8. Results will vary from state to state, but the scatterplot for most toll roads generally indicates a linear pattern with positive slope. For instance, tolls on the Pennsylvania Turnpike result in the following:

9. After gathering data and making a graph, students should analyze the results. Gathering the data and creating graphs is skill-based tasks. While it is important for students to develop these skills, it is more important for students to conduct an analysis of their
completed graphs to develop conceptual understanding of rates of change.

10. Questions 4-10 on the activity sheet require students to analyze the graph, and you may wish to have students work on these questions in their groups. After they complete these questions, conduct a follow-up discussion to review their answers and to ensure a high level of student understanding. Allow each group to present their line of best fit and how it was determined.

11. Alternatively, you may choose to have students consider Questions 4-10, as well as other questions that you devise, as part of a whole-class discussion. If you choose this option, do not distribute the second and third pages of the activity sheet. Instead, ask the questions one at a time, and allow students to discuss them as a class. The conversations that occur between students are often beneficial. (To ensure all students participate in the
discussion, and to prevent just a few students from monopolizing the conversation, you can use a random selection technique to call on students. For example, you can put all student names in a hat and draw them at random.

**Special Education:** Provide students with a sign to cue the teacher for random selection. This allows students to confidently engage in classroom discussion without fear of being ridiculed for an outlandish response.
**Mathematics**
**Grade 8**

**Theory:** Good mathematics teachers typically use visuals, manipulatives, and motion to enhance students’ understanding of mathematical concepts, and the US national organizations for mathematics, such as the National Council for the teaching of mathematics (NCTM) and the Mathematical Association of America (MAA) have long advocated for the use of multiple presentations in students’ learning of mathematics. When mathematics is presented as an almost entirely numeric and symbolic subject, there are a multitude of missed opportunities to develop visual understandings. There is a growing body of evidence from neuroscience of the brain showing the necessity and importance of visual thinking to all levels of mathematics.

<table>
<thead>
<tr>
<th>SLO/NJSLA</th>
<th>Strategy</th>
<th>Resource</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>L0 #7:</td>
<td><strong>Using Visual Understanding:</strong> Young children are able to draw and create visual images that communicate information to others. They understand that lines, shapes, forms, and colors convey meaning. They willingly express their ideas and creativity visually. Studies have shown that children have</td>
<td><strong>Rise-Run Triangles:</strong> Counting for Slope Activity Sheet, Colored pencils (optional)</td>
<td><strong>Rise-Run Triangles:</strong> 1. Page 1 is meant to be completed as a class, so having an overhead slide of this page will be helpful. 2. Distribute the activity sheet and make sure each student has 1 or 2 colored pencils. You might ask students to use one color when they're drawing a triangle for a line with positive slope, and another color for</td>
</tr>
</tbody>
</table>
Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation \( y = mx \) for a line through the origin and the equation \( y = mx + b \) for a line intercepting the vertical axis at the origin.

**ISLA: 8. EE.B.6**

Provide students with study sheets to identify how to find the slope (rise over run). Develop a visual such as a mock video game to understand how to find. ex.; Mario moving up and down while moving vertically.

**Special Education Strategies:**
- Review graphs of proportional relationships
- Review graphs to be able to compare slope of the related line in the proportional relationship
- Provide different examples of slope
- Provide models
- Align unit rates to slope so students can identify the consistency of change
- Review and practice how unit rate is represented
- Review and practice drawing the graph of proportional relationship between the two quantities
- **Experiment with peer teaching:** embrace student capacity to internationalize and find relevancy in what they draw, and they easily make connections to other areas of learning through their image-making (Davis, 2005).

**Special Education:** supply students with the same worksheet modified using larger graph paper and quadrants color coded.

4. Encourage students to simplify their fractions on page 1 of the activity sheet. Point out that for each line, the simplest forms of the fractions are equivalent — no matter which two points on the line your student uses, or how large the triangle is, you get the correct slope.

5. On page 2, students are given the slope triangle in the first 3 examples (the top row). In the next 3 examples (middle row), they are given only the points to use to draw the triangle. In the last 3 examples (bottom row), they are given the points and told to draw the triangle to find the slope.
vocabulary and math discourse by allowing them to teach each other through hands-on, discovery-based activities.

**Special Education Strategies:**
Peer teaching can be a strong part of the inclusive classroom, but much care should be taken to pair Special Education students with strong partners.

(bottom row), students have found the points themselves before drawing the triangle, determining the slope. The here is to gradually get students comfortable with finding the slope.

6. While students work on problem two, be sure that they:
   - Simplify all fractions.
   - Determine which lines have negative slope and use a negative fraction to represent the slope of these lines.

7. This exercise provides students with the skill of finding the slope of a line from a graph. This skill can be applied to less abstract examples using real data from a table or a graph.
References
(i.e. scholarly journals)
