Educating Young Men

Language Arts/Mathematics

Grades 4 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.

Recent and current research report 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.

Extracted from Me Read? No Way! Copyright Ontario Education
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 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 em 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 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 d 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 ints 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.

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

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. omputer 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).

Boys need quiet times in order to reflect and re-energize. Boys need quiet times to think, read and at times quietly chat with others. Arrange schools so that there are quiet spots for thinking.

How 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. If you really have to pick a battle with a boy, see him after class (for your own protection, always keep doors open for boys and girls when you see them in private). There are also decision-making differences between girls and boys when involved in dispute resolution. Girls are often more 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 reinforce a rule such as “you wouldn’t let him do that to you and I’m not going to let you do it to him.”

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

determining their actions. Have a couple of core values (e.g. compassion, generosity, being part of a team). Live by them and insist upon them. Help boys to learn that they can be heroes and victorious but that winning doesn’t mean someone else has to lose.

Use 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.

Word rules and fewer words is better
ave 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”. When you make an instruction use a back-up visual that you can point to for boys who have difficulty listening.

ove 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 mingling to achieve a set target are powerful strategies with boys.

ontrol where they sit
ove 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 they need quiet times to think, read and at times quietly chat with others. Arrange schools so that there are quiet spots for thinking.

ys are loyal and funny
ys 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. Make it smart to be smart.

ys generally learn through doing-thinking-talking
ys 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.
Teaching Young Men
Model of a Boy-Friendly Curriculum

**BOYS NEED CURRICULUM THAT PROVIDES**
- "Safe" classes that foster discussion
- Tasks that are open-ended and require interchange with others
- Subjects that mandate exploration of "the self"
- Teachers who "facilitate"
- Subjects that accept alternative truths

**BOYS NEED CURRICULUM THAT PROVIDES**
- A wide variation of courses and activities.
- Teachers with "passion"
- "Disciplined freedom"
- Avenues to be impulsive
- Tasks that are "relevant" can be explored through boys' culture
- Problem-based learning, ("doing it")
- Hands-on activities with practical solutions

**BOYS NEED CURRICULUM THAT PROVIDES**
- Small class sizes
- Pedagogy that counters fear of ridicule or embarrassment
- Skills to enable expression
- A vocabulary to discuss masculinity
- A mandate to explore individuality
- Opportunity to engage "a passion"
- Opportunity to be a risk-taker
- A level playing field between types of masculinities

**BOYS NEED CURRICULUM THAT PROVIDES**
- Teachers skilled a facilitating boys' exchange of ideas.
- A range of tools to express ideas
- A range of outcomes to set tasks
- Criticism skills
- A mandate for the expression and exchange of ideas
- Subjects with "non-binary" epistemologies
- Subjects that are non-competitive and allow access

**BOYS NEED CURRICULUM THAT PROVIDES**
- Freedom for individual interpretation of curriculum tasks
- Freedom to undertake curricular tasks according to personal skills
- Freedom to access arrange of academic and non-academic activities
- Freedom from pursuing an "ideal" masculinity

Adapted from Imms, 2003

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 sources 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-world 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 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).
**Keeping it real**—Make reading relevant to boys

Boys will be deeply engaged in literacy when they are fully committed to the subject of the reading or writing task itself. Having boys explore real-world themes and issues – particularly, but not limited to, those that touch them personally – taps into their need for academic tasks to be purposeful, and meaningful to their lives.

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<th>SLO/NJSLA</th>
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| SLSA.R1.  | • Utilize paired text that focuses on a current event aligned to your students reading preferences and interests.  
• Build learning around students’ interests and abilities, and situations they would find authentic.  
• Create authentic learning experiences that involve both direct instruction and students’ discovery of things on their own | • Charlotte’s Web by E.B White  
• Student selected reading from classroom libraries  
• Special Education:  
  • Provide audio versions of texts, as available.  
  • Provide students with leveled text.  
  • May use resources from Wonder Works | • Choose text that inspires debate. Start with an overarching focus 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 “These students all said something similar … does anyone have a different idea?”  
• Engage students in literacy by exploring the heritage and history of their community, using a variety… |

**Special Education Strategies:**

• Boys are energized and motivated by movement.
They are better engaged when they are actively participating in a lesson. It is encouraged to create lessons in which students are able to move around.

- Select materials according to student interests and real-world themes (how to build roller coasters/spiders…)
- Have students in groups take part in a gallery walk/tour. The teacher may post a variety of pictures around the room or at specific stations. The teacher may provide students with questions that they must answer as they take part in the gallery walk/tour. Students should then discuss their findings with their groups and/or the class.
- Most boys do not cope well with vague instructions and long explanations; they require a much more structured approach to learning. Consider posting of meaningful learning experiences such as having them work with mentors, gather stories about the past from family members and from community events, gather relevant historic artifacts and photographs.
- Have students explore the theme of water for a full school year, working with local college science students to investigate the health of local ponds and streams and to collect and analyze data, and then writing a report to the community on their findings. Special Education:
- Have students engage in Most Interesting Character Debate. Students should read a comic book/historical fiction story and then select or be assigned a character to defend as the most (your choice here: interesting, important, meanest…). In a group, using explicit details and
and explaining (or review) gallery walk protocols and directions.

- For students who struggle with writing, consider allowing them to create pictorial representations of their thinking in the tour notes or provide a scribe for them to dictate their ideas to.
- For students who struggle to articulate their thinking aloud, consider providing a sentence starter such as, “I think the most interesting thing about this walk/tour will be ________.”

examples from the text, students should prepare a defense for their character. Students are evaluated on their reference to explicit details and examples in the text as well as inferences drawn from those details.

Grouping: Small group

- Teacher models the use of sentence starters/sentence frames such as “The author states …” and “On page …” to encourage students to provide evidence from the text.
Language Arts
Grade 4

**Theory:** Explicit teaching offers good comprehension skills

Search indicates that good readers are strategic in their reading, and that the explicit teaching of comprehension strategies can foster development of comprehension skills. For many boys, literature appears to involve a secret code, one that is understood by authors, teachers, and some students, especially girls. Not surprisingly, the fact that these “insiders” all understand the code and are able to interpret “deep” or “hidden” meanings. Boys need to be let in on the “secret” of what happens when we read and write. We need to examine processes that are often hidden or left unspoken and make them clear and explicit.

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<tr>
<td>JSLSA.R2.</td>
<td>Provide direct, explicit mini-lessons on:</td>
<td>● Charlotte’s Web by E.B White</td>
<td>● Graphic organizers and other visual tools can be useful means of demonstrating the relationships between things, both spatially and conceptually. They can be used in literacy activities in ways that may help “let boys in on the secret”.</td>
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<td>● Monitoring one’s understanding of a text and making adjustments (e.g., rereading a passage) as needed</td>
<td>● Student selected reading from classroom libraries</td>
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<td>● Using relevant prior knowledge (e.g., to make predictions)</td>
<td>● Aesop’s Fables</td>
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<td>● Generating questions about the text</td>
<td>● Boys are more engaged and do their best when teachers establish authentic purpose and meaningful real-life connections.</td>
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<td>● Thinking aloud</td>
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Boys are more engaged and do their best when teachers establish authentic purpose and meaningful real-life connections.

- Use graphic organizers to examine similarities and differences between characters or between various literary forms, such as poems, stories, and...
- Paying attention to and determining or “uncovering” a text’s structure
- Drawing inferences from a text
- Summarizing a text

**Special Education Strategies**

- Understand and use close reading strategies for determining theme (e.g., look at the characters and see how they change through the challenges they encounter in the story.
- How to use strategies, such as taking notes, re-reading, summarizing, and paraphrasing
- Provide students with sentence frames and or graphic organizers to summarize.
- Scaffold by reviewing story elements such as plot, characters, setting, theme, solution, conflict. Then, create a visual for students

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- Students will gain deeper understanding of theme in the story by relating it to their own lives. For example, for theme, “Good friends are always there for each other”
- *In Charlotte’s Web,* students can share stories about times they helped a friend or were helped. Give students the option on how they would like to share it (creating a video, poem, song etc.)
- Students will draft their summary on a graphic organizer. Then have them create a summary on www.storyboardthat.com
- **Sequence Sentence Strip**
- Cut apart three to five sentence strips with event from a historical event or steps to make or build an object. Challenge students...
- Themes are often associated with abstract nouns (justice, peace, friendship); an extension activity could include making a chart of such words for the classroom.
- Review story elements by using clips of action movies such as: The Spy Next Door, G force, Robots, The Incredibles, and or Monsters vs Aliens
- Post anchor charts with different themes in texts with illustrations and labels

arrange the strips in the correct order. After they have selected the sequence, have them explain/defend the sequence.
**Language Arts**  
**Grade 4**

**Theory:** Have the right stuff—Choosing appropriate classroom resources for boys  
It might be easy to conclude that boys do not like to read. However, in many cases it is not that boys do not like to read, but rather that they do not like to read what is presented to them in the classroom. Building an engaging literacy environment includes offering a varied mix of materials that align to boys’ reading preferences.

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| SLSA.R10. | • Read aloud with expression, so students can hear how a capable and fluent reader sounds.  
• Have fun, by using your voice and body to bring the story alive.  
• Provide props and link the texts you’re reading to real-world objects.  
• Plan personal reading time for students, in regularly scheduled blocks of time every day. | Build classroom libraries with:  
• books that reflect their image of themselves  
• books that make students laugh and that appeal to their sense of mischief  
• fiction, but preferably fiction that focuses on action more than on emotions | Conduct reading and interest surveys. These surveys can be used in conjunction with additional data to group students for working collaboratively.  
Engage students in selecting materials from the classroom library to enhance their sense of ownership and interest in new resources.  
Turn the classroom into a library-café, offering hot |
### Special Education Strategies:

- **Provide students with** leveled books and audio. If possible, provide books narrated by someone famous or a person that they admire (athlete, singer, movie star).
- **Ensure that students understand what personal preferences/selection means.**
- **For struggling readers who may have trouble selecting appropriate texts based on multiple preferences,** consider asking students to choose one preference from the teacher’s list.
- **Teacher may also create an anchor chart with focus questions to guide students when making their selection**
  - “What types of characters do you prefer?” “What types of settings (time and place) do you prefer to read about?”
  - books in series, such as the Harry Potter series, which seem to provide boys with a sense of comfort and familiarity
  - **Book selection for boys should reflect their interests, backgrounds, and abilities.** Allow boys to choose topics in reading that appeal to them (Superheroes, nonfiction, manuals...)
  - **Find writers boys can relate to.**

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**Special Education:**

Have students take part in literature Circles. Literature circles give students the opportunity to select their book of choice. Literature circles provide boys with the support they need to focus on the “big ideas”, as well as on the words and the structure of the texts. During literature circles students have meaningful conversations.

chocolate and cookies along with a wide variety of reading materials, to give students the experience of using books in casual ambiance, while they complete reading assignments.
Mathematics
Grade 4

Storytelling humanizes mathematics, where students are able to relate to mathematics on a personal level. Humanistic mathematics involves interdisciplinary connections between mathematics and other worlds of thought and ways of learning (Tennant, 2014). This humanistic approach to education may allow for one to develop human values, self-confidence, and gives room for self-reflections while at the same time it may increase awareness of others’ need, which may result in something in mathematics for students.

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<tr>
<td>4.OA.A.1: Multiplication equations</td>
<td><strong>Humanistic Mathematics:</strong> Storytelling is a fundamental unit of transferring knowledge and in mathematics makes learning more accessible, where students are more engaged with their learning.</td>
<td><strong>Build A Math Story</strong> Manipulatives – colored counters and/or linking cubes -graph paper &amp; pencil (to represent and draw) -explain in writing -work with partner</td>
<td><strong>Build A Math Story</strong> Students write their own stories showing their own comparisons of factors and products.</td>
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<td>Yummy M&amp;M's.doc (Cache County Utah, Lesson)</td>
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<td></td>
<td>What's In Your Bedroom.doc (Cache County Utah, Lesson)</td>
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- Use an engaging story to launch each lesson.
  Example: Jose is drawn to the bowl of M&M peanuts and sits down by the bowl. He picks out all of the blue M&M peanuts (his favorite) and eats them first. He then picks out all of the green M&M peanuts (his 2nd favorite color) and eats them. He ate 9 times as many blue M&M’s as green M&M’s.
- To ensure that students stay on task use smaller factors and products as a comparison (example: 2 x 3). Students write their own stories to show their own comparisons of factors and products.
- Extend activity by showing different comparisons that are motivating to students.

Special Education Strategies:
- Have students listen to a variety of multiplication stories that relate to the standards that are written at their functional level.

| Threatened and Endangered: | 
|---|---|
| https://www.illustrativemathematics.org/content-standards/tasks/1809 | 
| Thousands and Millions of Fourth Graders: | 
| https://www.illustrativemathematics.org/content-standards/tasks/1808 | 
| Special Education: | 
| 1. Equal Groups | 
| A sport shop sells tennis balls in boxes of 6. | 
| Multiplication: Dana bought 3 boxes. How many balls did she buy? | 
| Division: Adam needs 18 balls. How many boxes should he buy? | 
| Have students arrange tennis balls in boxes. Have them answer, “How many boxes did Dana buy?”. Then, count the balls and write an equation for how many balls there are in total |
- The teacher models how to write equations.
- Students write their own multiplication word problems using a sample and a word bank with content vocabulary.
- Have students exchange their word problems and write equations.
- Have students create area models of a home, where they need to find the area of each room. Students work together to sketch the home using rulers, graph paper, and highlighters.
- The teacher models how to write equations.
- Students write their own multiplication word problems using a sample and a word bank with specific content vocabulary.
- Have students exchange their word problems and write equations.
- Have students create area models of a home, where they need to find the area of each room.
- Provide students with multiplication chart as needed
- Solve problems using repeated addition.
- Review place value concepts to build background knowledge.
- Review multiplication facts 0-12
- Drawing pictures or using models will help students understand what the problem is asking. They should check the reasonableness of their answer using mental computation and estimation strategies.
- Broaden students’ initial understanding of multiplication as repeated addition by dealing with situations involving arrays, expansions, and combinations.
Mathematics
Grade 4

Teachers increase the use of graphics, pictures, and storyboards in math-related classes and assignments. When teachers use graphics more often (even well into high school), boys write with more detail, retain more information, and get better grades on writing across the curriculum. Teachers should provide repeated opportunities for students to play games, then let the mathematical ideas notice new patterns, relationships, and strategies.

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<tr>
<td>4.OA.A2</td>
<td>Interactive Graphic Lessons</td>
<td>Build A Math Story</td>
<td>Interactive Graphic Lessons: Build A Story</td>
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<td>This Standard call for students to translate a comparative situation into equations and then solve.</td>
<td>graph paper, unit squares, Design visual models</td>
<td>Represent unknown numbers using symbols or letters:</td>
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<td>Use Interactive lessons to engage students by making the mathematics come alive through graphics, as a guided investigation of each essential question, and maintain the cognitive demand.</td>
<td><a href="https://www.mathplayground.com/tb_multiplication/index.html">https://www.mathplayground.com/tb_multiplication/index.html</a></td>
<td><a href="https://learnzillion.com/lesson_plans/564">https://learnzillion.com/lesson_plans/564</a> represent-unknown-numbers-using-symbols-or-letters</td>
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<td>After Teachers give each interactive lesson to students, they can work in</td>
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<td>Solve multiplicative comparison word problems by using a multiplication sentence:</td>
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<td>Solve multiplicative comparison word problems by using bar models to represent division:</td>
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To write their own stories to show their own comparisons of factors, products, and quotients and utilize visual tools to express or represent their math.

**Special Education Strategies:**

- Use arrays to show multiplication concepts.
- Review multiplication facts and provide charts as needed.
- Provide students with calculators or a multiplication facts table.
- Using a partially completed template,
- have students write their own stories to show their comparisons of factors, products, and quotients.


Solve multiplicative comparison word problems by using a division sentence:


Solve multiplicative comparison word problems by using a multiplication or division:

[https://learnzillion.com/lesson_plans/694 multiplicative-comparison-word-problem-using-multiplication-or-division](https://learnzillion.com/lesson_plans/694 multiplicative-comparison-word-problem-using-multiplication-or-division)

Each interactive lesson students can work in groups, pairs, or individually to write their stories to show their own comparisons of products, and quotients and utilize visual express or represent their math.

**Special Education:**

Teacher may provide students with sample visuals.
Instead of apples have boys compare toy cars.

Bill has 2 toy cars. Kyle has 3 times as many as Bill.
**Mathematics**  
**Grade 4**

**Theory:** Teachers provide competitive learning opportunities, even while holding to cooperative learning frameworks. Competitive learning includes classroom debates, content-related games, and goal-oriented activities; these are often essential for boy-learning and equally useful for the life success of girls, too.

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<tr>
<td>O #6:</td>
<td>Gamify Lessons</td>
<td>Place Value Games &amp; Tools</td>
<td>Design Place Value Games</td>
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| a whole number up to one million, explain that a digit in one place represents ten times what it would represent in the place to its right. | - Appeal to the gaming culture by writing instructions for games and offering students the opportunity to respectfully compete with each other.  
- Students can discover practical, real-life ways to apply math skills.  
- Students who have differing levels of skills and ways of thinking can learn from each other. | - graph paper  
- unit squares  
- Legos  
- visual models’ tools  
- Markers  
- Cardboard  
- Colored papers  
- Markers | Students create a math game that relates to place value essential understandings learned in 4.NBT.1 to re-teach or reinforce. The game should be geared toward 3rd/4th grade students. It should be on an Intermediate level. Upon completion of this project, students will have a chance to test some of your classmate’s games. Game types could be but not limited to:  
- Card game  
- Board game |

**SLO/NJSLA:**  
**4.NBT.A.1**  
Recognize that in a multi-digit whole number, a digit in one place represents ten times what it presents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division. [Grade 4 expectations in this domain are limited to...]

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**Place Value Games & Tools:**  
- graph paper  
- unit squares  
- Legos  
- visual models’ tools  
- Markers  
- Cardboard  
- Colored papers  
- Markers

**Design Place Value Games:**  
- Students create a math game that relates to place value essential understandings learned in 4.NBT.1 to re-teach or reinforce. The game should be geared toward 3rd/4th grade students. It should be on an Intermediate level. Upon completion of this project, students will have a chance to test some of your classmate’s games. Game types could be but not limited to:  
- Card game  
- Board game
- Students can explore math in formats they know and enjoy (like on video game systems).
- Students can test new strategies and ideas without feeling the pressure of being graded.
- Understanding how the value of a digit changes depending on where it is located in a number is essential. In a base ten system, multiplying or dividing a number by 10 changes the value of the digit by one whole place value position.
- Students complete at least one game applying concepts of place-value to use as an exemplar. Students create a math game that relates to place value essential understandings learned in 4.NBT.1.

Interactive place value games:
- Place Value with Manipulatives
- Converting between place values

https://www.khanacademy.org/commoncore/grade-4-NBT#4.NBT.A.1
https://hcpss.instructure.com/courses/107/pages/resource-bank

Special Education:

**Cup-Stacking Place Value Game**
Label each cup with a digit from 0-9, use a sharpie for this, and write the digit on both sides of the lip. Repeat for the number of cups you have. The number of cups you need depends on the number of students playing, and how high you wish for your numbers to go.

**Place Value Math Circle**
Each student is given a digit from 0-9. There is a decimal someone to wear as well. Once everyone is wearing their digit, the first person reads the instructions on the card and builds the number using people.
<table>
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<tr>
<th>Identifying Place Values from Between Columns</th>
<th>Place Value Pirates (game)</th>
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**Special Education Strategies:**

- Read a read-aloud about place value in order to reinforce or introduce the topic.
- Provide students with color coded place value charts or place value flip charts to solve problems.
- Have students use base ten blocks to “create” numbers.

in the class. Read the number aloud
**Theory:** The more learning is project-driven and kinesthetic, the more boys' bodies will be engaged in learning—causing more formation to be retained, remembered, and displayed on tests and assignments. Also, when teachers use manipulatives, pictures, graphics more often (even well into high school), boys produce responses with more detail, retain more information, and get better grades on work across the curriculum.

<table>
<thead>
<tr>
<th>SLO/NJSLA</th>
<th>Strategy</th>
<th>Resource</th>
<th>Activity</th>
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<tbody>
<tr>
<td>L.O #7:</td>
<td><strong>Project-Driven and Kinesthetic:</strong> Classroom methodology includes project-based education in which the teacher facilitates hands-on, kinesthetic learning and is strategic about using manipulatives. The Student Debrief is intended to invite reflection and active processing of the total lesson experience.</td>
<td><strong>Create and Solve Multi-step Word Problems</strong></td>
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<td>- Technology for visual modeling</td>
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**SLO/NJSLA:** 3.NBT.2

**Strategy:** Read and write multi-digit whole numbers using base-ten.
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Student Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How does a tape diagram help when solving a problem?
- What is the hardest part about creating a context for a word problem?
- To write a word problem, what must you know?
- There are many different contexts for Problem 2, but everyone found the same answer. How is that possible?

Draw a labeled tape diagram on the board and give students a context. Have them write a story problem based on the tape diagram.

Have two pairs of students who you think can be successful writing a problem work at the board while the others work independently or in pairs at seats. Review the following questions before beginning the first problem.

What story makes sense with the diagram?
What have you learned about yourself as a mathematician over the past module?
How can you use this new understanding of addition, subtraction, and solving word problems in the future?

**Special Education Strategies:**
- Provide exemplars on how to compare multi-digit numbers.
- Compare two multi-digit whole numbers using greater than, less than or equal to symbols (>, <, ≥, ≤).
- Provide sentence frames to support oral response, such as “_____ tens _____ ones are _____ (standard form) _____.”

What question will I ask in my word problem?
As students work, circulate. Reiterate the questions above.
After two minutes, have the pairs of students share their stories.
For about one minute, have the demonstrating students receive and respond to feedback and questions from their peers.
Calculate to solve and write a statement.
Give everyone two minutes to exchange stories, calculate, and make a statement of the answer.
Assess the solution for reasonableness.

**Special Education:**
Work with students in small groups and model how to write a story problem based on a
diagram. Provide students with guided questions to assist them with writing their own stories.

References
(i.e. scholarly journals)


Amanjot Toor, Joyce Mgombelo. Teaching mathematics through storytelling: Engaging the 'being' of a student in mathematics. Konrad Krainer; Naďa Vondrová. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. pp.3276-3282, Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education. <hal-01289881>