

Enhancement Activities/Strategies for Gifted/High Ability Learners: Sample Math Learning Plan

Big Idea/ Topic

- Develop an understanding of whole number relationships and place value, including grouping in tens and ones and comparing 2 two-digit numbers, based on meaning of the tens and ones digits.
- Organize, represent and interpret data up to 3 categories

Standard Alignment

MGSE1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

MGSE1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Advanced Research

- Have students collect weather data over a period of time, including the temperature when their day begins and the temperature at the end of the day. Use their data to compare and contrast 2-digit numbers, plot them on a number line, create graphs, etc.
- Students will be familiar with tens-partner numbers, but a fun challenge is for them to explore numbers that are hundreds-partners. Give students a blank hundreds chart and have them use a different color every time they find a new hundreds-pair. For example, 20 and 80 may be colored blue, 33 and 67 may be pink, etc. Encourage students to look for patterns that can help them find many number pairs. (Since 1st graders won't have much experience adding 2-digit numbers, you may want to allow them to use a calculator to check their work.)
- Have students explore the question, "How fast can I run?" Collect data to answer this question by having students run as far as they can in either five or ten seconds. Then have them measure the distance they ran in centimeters or meters. (Your PE teacher may be willing to help with this project if your students are at school.) Use this data to practice

comparing numbers, sequencing numbers, finding numbers on a number line, regrouping or bundling numbers, etc.

Communication

- Give students an equation to solve that includes two operations. Then, challenge them to write a number story or word problem that could be solved using this equation. (You may even consider introducing use of parentheses in equations.)
- Play Number Ninja to help students think critically and practice communicating mathematically. Have one student, the Number Ninja, select a number. (Set parameters such as “a number less than 50,” or “a 3-digit number,” depending on how complex you want the game to be.) The Number Ninja should secretly write it down. Decide a set number of questions that classmates will be able to ask to try to figure out the Number Ninja’s secret. If the students do not guess the number within the set number of questions, the Number Ninja gets a point. If they do, the class gets a point. This game is a great opportunity for the teacher to see what mathematical concepts students know and understand as they ask questions.

Critical Thinking and Critical Problem-Solving Skills

Encourage students to think critically about place value by working on these challenges:

- (1) Play the [5 Steps to 50](#) game to practice working with 1s, 10s, and 100s.
- (2) Practice addition facts with the [Magic Vs puzzle](#).
- (3) Play the [Numskill online logic game](#) to practice working with basic addition facts.
- (4) Have students explore patterns in a hundreds grid by completing the [100 Square Jigsaw](#) puzzle.
- (5) Have students complete these [Domino Number Pattern puzzles](#) to explore number relationships.
- (6) Try the [Open Middle Order Numbers puzzle](#) to practice sequencing numbers.

Creative Thinking and Creative Problem-Solving Skills

- Read or [watch a read-aloud](#) of *How Many Seeds are in a Pumpkin?* Use this as a mentor text to encourage students to write their own skip-counting picture books.
- Try the Reverse Questions activity to challenge students’ creative thinking skills. Tell students a number and that your number is the answer to an equation. Have students create and model an equation that could have your number as the answer. Then, challenge them to

write a number story or word problem that could be solved using their equation and your answer.

- Give students a hundreds chart and allow them to color a picture on it, as though each square were a separate pixel in the picture (You may need to explain what pixels are and for students to make sure they color in the whole square if it is part of their picture.) Have students practice reading all of the numbers they colored. Another big challenge could be to have students use a calculator to find the sum of all the numbers that were colored as part of their picture.
- [“Which One Doesn’t Belong?”](#) provides an opportunity for students to think creatively about numbers and mathematical visuals. Display a puzzle for students and have them make claims about which number they think doesn’t belong and support it with evidence. It is interesting for students to see how many different “correct” answers their class can generate. This is a great challenge to help students realize that sometimes problems can have more than one solution.
- Try the “What’s My Question” activity to help students begin to think about ways to explore numbers. To do this activity, show students an interesting picture and ask them, “What question could we ask?” The author suggests making sure to tell students they don’t have to solve the puzzle so they won’t be afraid to ask difficult questions. (Although a fun challenge as a class might be to come up with a plan to find the answer to a difficult question.) This activity also promotes curiosity and creative thinking.

Awareness of Self—Student’s Well-being

- The math-based game [Number Match](#) is a great way to help students think about the importance of responding to the needs of others and developing a sense of teamwork among your class.
- Train your students to have grit and persevere when challenges are tough. Advanced students have often been told, “You’re so smart!,” so when a challenge occurs and they feel “not smart,” they sometimes are not sure how to handle that situation. Get in the habit of praising students for hard work, rather than “being smart.” Train students to realize the value that “staying in the struggle” has to the learning process. These [picture books](#) can be useful stories to help prevent math anxiety in young students. [These picture books](#) help humanize mathematics for students as well.