LESSON PLANS: ONTARIO
Grade 2: Patterns and Relations
Equality between Pairs

🕐 **45 MINS**

powered by **Mathletics**

Overall Curriculum Expectations:

• Demonstrate an understanding of the concept of equality between pairs of expressions, using concrete materials, symbols, and addition and subtraction to 18.

Specific Curriculum Expectations:

• Demonstrate an understanding of the concept of equality by partitioning whole numbers to 18 in a variety of ways using concrete materials.

• Represent. through investigation with concrete materials and pictures, two number expressions that are equal, using the equal sign.

Introduction to Lesson   🕐 10 MINS

Teacher Background:

Display this on a whiteboard/poster paper. On the interactive whiteboard, from your Teacher Console go to

   Demonstrations > Concept Search > Concept Search.

Search equal and unequal. These slides will display the definition and symbol, and give examples. Have the students brainstorm situations where they could use these symbols or where they have seen them before. Display examples on the board and have students figure out which symbol to use.

Ask students for further elaboration:

• When is something balanced or unbalanced?

• Prompt questions about a scale with weighed objects.

• Then have a class discussion about what they think/know about the terms equality and inequality.

📚 ITEMS NEEDED

✔ Interactive whiteboard
✔ Mathletics teacher login
✔ Mathletics student logins
✔ Student handouts from eBooks
✔ Problem Solving page
✔ Classroom manipulatives
✔ Computers/tablets
✔ Math journals

📑 ASSESSMENTS

✔ Observation and participation
✔ Review completed worksheets
✔ Review journal responses

⚙ ACCOMMODATIONS/ MODIFICATIONS

✔ Allow student to use manipulatives to help create patterns.
✔ Create heterogeneous grouping.
✔ One-on-one with the teacher

📝 EXTENSION OF LEARNING

✔ Problem Solving Games
✔ Curriculum activities
✔ Explore "Rainforest Maths."
✔ Live Mathletics
✔ Weigh different substances in science. Discuss mass and different types of materials. Create balanced and unbalanced scales. Have students write an expression to describe the equality or inequality.

The Lesson — 20 MINS

Problem Solving Level 1 eBook

- **Discover:** Hand out Problem Solving page from eBooks. Go to

  Teacher Console > eBooks > Problem Solving > Level 1.

  Go to Open ended on the right side of the page. Go to Worksheet 6. This worksheet will allow students to solve a problem based on something being balanced or equal. Have students record their answers. Open class discussion about answers and strategies.

  Extension questions:
  What if we wanted to make the scale unbalanced or unequal?
  What if we doubled the pile of books? What pile of books can be added to balance it now?
  Can you re-create this problem using only numbers? What would that look like? What symbols can we use while solving this problem?

  Ask students to flip the page over and create their own problem using pictures. They can have a problem that will be either equal or unequal.

- **Explore:** Mathletics—Students can explore within Mathletics. The areas they should focus on are "Rainforest Maths," Grades 2 and 3, Algebra; Concept Search; and Problem Solving, Balance.

- **Reinforcement:** eBooks—Students are to complete the pre-selected pages. Teacher can use manipulatives to help support various learning styles. Recommend: eBooks, Grade 2, Patterns and Relationships, pages 18–25; and Grade 3, Patterns and Algebra, pages 13–18.

- **Extra-time activity/cross-curriculum activity:** Students can create their own balance scale. This is created with a hanger, hanging a cup from a string on each end of the hanger. Students can place various classroom objects on the scale and record what is equal and unequal.

Mathletics
Problem Solving
Level 1
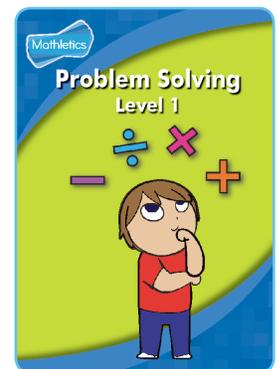
Consolidating the lesson — 15 MINS

- Review the symbols for equal and unequal. What strategies should students use? How can they use these symbols with numbers, words, pictures, and sounds?

- Have students write a number expression that shows equality. Students must write this on chart paper or the interactive whiteboard. Discuss the different statements and how they show equality.