

LESSON PLANS: ONTARIO

Grade 5: Number Sense and Numeration Using Pattern Blocks to Teach Fractions

 50 MINS

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 Mathletics

Overall Curriculum Expectations:

- Read, represent, compare and order whole numbers to 100 000, decimal numbers to hundredths, proper and improper fractions, and mixed numbers.

Specific Curriculum Expectations:

- Represent, compare, and order fractional amounts with like denominators, including proper and improper fractions and mixed numbers, using a variety of tools.
- Demonstrate and explain the concept of equivalent fractions, using concrete material (e.g., fraction strips to show that $\frac{3}{4}$ is equal to $\frac{9}{12}$).

Introduction to Lesson

 10 MINS

Teacher Background:

- Play Dr. Marian Small's Pattern Blocks video to introduce pattern blocks and discussion around fractions. Log in to

Teacher Console > eBooks > Grade 5 > Marian Small's Pattern Blocks #1.
Click on Videos > Pattern Blocks #1.

Pause during the questions asked in the video. Discuss various responses.

- Hand out pattern blocks to students, as a manipulative to begin thinking about how they could create a shape that is one half yellow.
 - Display Pattern Blocks in Concept Search for an added visual for students.
 - In your Teacher Console go to **Demonstrations > Concept Search**.
 - In Search bar, search pattern blocks.
 - Have students begin to manipulate the blocks and create different fractional numbers.

ITEMS NEEDED

- ✓ Interactive whiteboard
- ✓ Mathletics teacher login
- ✓ Marian Small's printed student problems
- ✓ Pattern block manipulatives
- ✓ Laptops

ASSESSMENTS

- ✓ Observation of students working together to create fractions.
- ✓ Participation in interactive

ACCOMMODATIONS/ MODIFICATIONS

- ✓ Can practice easier/harder activities.
- ✓ Can use "Rainforest Maths" at a level below or above.

EXTENSION OF LEARNING

- ✓ Search number lines and/or fractions in Concept Search. Show students how to use a number line to represent and compare fractional amounts.
- ✓ So students can have extra practice, log in to Student Console > Rainforest Maths > Grade 5 > Fractions. Students can extend their learning of fractions and practice questions for reinforcement.

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The Lesson

 20 MINS

Interactive Pattern Blocks—Marian Small's Activity

- Hand out printed Marian Small's Student Problem: Pattern Blocks. Log in to **Teacher Console > eBooks > Grade 5 > Marian Small's Pattern Blocks #1 > Student > Printable Problem**. Have students work together to complete the question. Students can work with partners or in small groups to determine various answers. Give students enough time to explore various possibilities and use a variety of different shapes, patterns, and numbers of blocks.
- Display interactive problem on the interactive whiteboard. In your Teacher Console, click on **eBooks > Grade 5 > Marian Small's Pattern Blocks #1 > Interactives > Problem**. Students can then come up to the interactive whiteboard and display their answers. Discuss with students how there are various answers to this problem. Fractions can be represented in a variety of ways.

Ask Students,

- o What would happen if we could only use red and yellow blocks?
- o How could we represent $\frac{1}{2}$ using the fewest blocks?
- o What different colour combinations could you use?
- o Did your pattern have a line of symmetry?
- o Did it need to have one?

NOTE: Try Extension of Learning task to introduce fractions on a number line, if students are grasping this concept well.



Reinforcement: Equivalent Fraction Activities

- Assign students curriculum activities to complete in the Student Console. Suggested activities include Shading Equivalent Fractions, What Mixed Number Is Shaded?, Equivalent Fractions on a Number Line 1, Equivalent Fractions on a Number Line 2.
- Students can use the "Rainforest Maths" Grade 5 fractions section for extra practice. It can also be displayed on the interactive whiteboard for students to reference while completing their assigned tasks.

Extra-time/cross-curriculum activity: Have students create fraction art. Have students represent a fractional amount and show an equivalent fraction. Students can represent their fractions by using paper and glue, drawing pattern blocks, creating two real-life objects, etc.

Consolidating the lesson

 20 MINS

- Play a game of Live Math as a whole class. Log in to your Teacher Console and click on **Demonstrations > Live Mathletics > Level 6 > World > Go**. Level 6 has some fraction computation questions.
- Have students complete an "exit slip" card before they leave class.
- Ask students, What did you learn about fractions? How do you best represent fractions? Share your learning.



For more information contact our friendly team...
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