



Fraction Tree



Overview

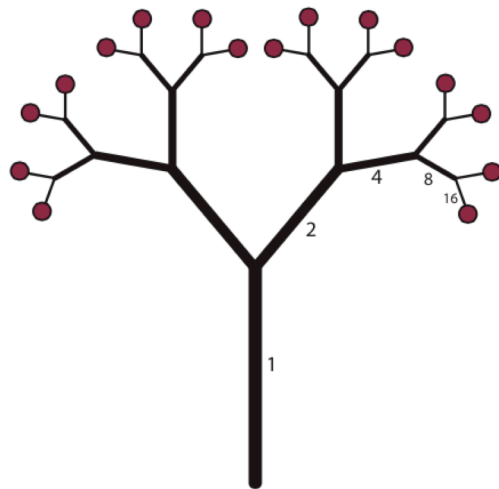
In this lesson, we use the branching of a tree to explore fractions in a simple, tangible way. Like all fractals, a tree grows by repeating a simple process. In this case, a tree trunk splits into two branches. Each branch splits again, making four branches, each of which split again, making eight branches, etc.

Students can see how the number of branches doubles at each step and how the various fractions within the tree add up to make a whole object. In addition, students work on adding fractions with uncommon denominators and marking the locations of fractions on a number line.

Appropriate for: Grades 3 – 12, college and adults

Objectives

- To model with mathematics
- To create a complex pattern by repeating a simple process
- To generate and analyze patterns
- To use operations to explain patterns in arithmetic
- To write and interpret numerical expressions
- To draw, construct and describe geometrical figures and describe the relationships between them



Materials

- Fraction Tree worksheet
- Pencil



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Common Core Standards for Mathematics

Code	Standard	Grade	Code	Standard	Grade
OA	Operations and Algebraic Thinking	3 – 5	NF	Number and Operations – Fractions	3 – 5
MD	Measurement and Data	3 – 5	RP	Ratios and Proportional Relationships	6, 7
G	Geometry	3	NS	Number System	6, 7

Common Core Standards for English Language Arts

Code	Standard	Grades K – 5	Grades 6 – 8	Grades 9 – 12
RL	Reading: Literature	1, 4, 7, 10	1, 4, 7, 10	1, 4, 10
RI	Reading: Informational Text	1, 3, 4, 7, 10	1, 3, 4, 7, 10	1, 3, 4, 10
FS	Foundational Skills	1, 2, 3 for grades K – 1; 3 and 4 for grades 2 – 5	None available	None available
W	Writing	2, 3, 8; 4 for grades 3 – 5	2, 3, 4	2, 3, 4, 9
SL	Speaking and Listening	1, 2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6
L	Language	1, 4, 6; 3 for grades 2 – 5	1, 3, 4, 6	1, 3, 4, 6
RST	Science and Technical Subjects	None available	1, 3, 4, 6, 7, 10	2, 3, 4, 6, 7, 10