Math Goggles:
Teaching Kids to See the Magic and Multitude of Mathematics in Art

Robin A. Ward, Ph.D.
Clinical Assistant Professor of Mathematics   Rice University School Mathematics Project
raward@rice.edu

7 Elements of Art
• Line   • Shape (2D)   • Form (3D)   • Space (perspective)   • Color   • Value   • Texture

Vincent van Gogh
The Starry Night (1889)
Wheatfield and Mountains (1889)
Wheatfield with Reaper (1889)
Wheatfield with Crows (1890)
Two Peasant Women Digging Field with Snow (1890)
Landscape with Snow (1888)
Winter Landscape: Memories of the North (1890)

Snow by Uri Shulevitz
Van Gogh (Getting to Know the World's Greatest Artists Series) by Mike Venezia
Reflections by Ann Jonas

Paul Klee
Farbtafel (1930)
New Harmony (1936)

Tidying Up Art by Ursus Wehrli

Jasper Johns
Target with Four Faces (1930)
Flag – Moratorium (1969)
Three Flags (1958)
Map (1961)

The Art of Freedom: How Artists See America by Bob Raczka

Salvador Dali
The Persistence of Memory (1931)

What's the Time, Mr. Wolf? by Annie Kubler
How Do You Know What Time It Is? by Robert Wells
The Story of Clocks and Calendars by Betsy Maestro
Alice Yazzie's Year by Ramona Maher
Salvador Dali Coloring Book by Prestel Publishing

Georgia O'Keeffe
Jimson Weed (1932)
Petunia (1932)

Georgia Rises: A Day in the Life of Georgia O'Keeffe by Kathryn Lasky
Actual Size by Steve Jenkins

Wassily Kandinsky
  Squares with Concentric Circles (1913)
  Several Circles (1926)

  What is Round? by Rebecca Dotlich
  So Many Circles, So Many Squares by Tana Hoban
  The Missing Piece by Shel Silverstein
  Wassily Kandinsky (The Life and Work of…Series) by Paul Flux

Henri Matisse
  The Family of the Artist (1911)
  Woman in a Purple Coat (1937)
  The Snail (1953)

  Pattern Fish AND Pattern Bugs by Trudy Harris
  Lots and Lots of Zebra Stripes by Stephen Swinburne
  Spirals, Curves, Fanshapes & Lines by Tana Hoban
  Wild Fibonacci: Nature's Secret Code Revealed by Joy Hulme
  Patterns in Peru: An Adventure in Patterning by Cindy Neuschwander

Andy Warhol
  Twenty-Five Colored Marilyns (1962)
  Self Portrait (1986)
  Campbell Soup I (1968)
  Ice Cream Dessert (1959)
  Endangered Species: Black Rhinoceros (1983)

  Uncle Andy's by James Warhola
  Cubes, Cones, Cylinders, & Spheres by Tana Hoban
  Mummy Math: An Adventure in Geometry by Cindy Neuschwander
  Almost Gone by Steve Jenkins

Piet Mondrian
  Composition with Red, Yellow, and Blue (1921)

  Two Short, Two Long: A Book about Rectangles by Christianne Jones
  City Shapes Series by Jennifer Burke

Other Children's Literature/Classroom Resources
  Books by Lucy Micklethwait
  Books by The Metropolitan Museum of Art (and other museums)
  Lines (The Museum of Modern Art)   AND Shapes (The Museum of Modern Art) by Philip Yenawine

Books by Robin A. Ward
  Math Goggles: Teaching Kids to See the Magic and Multitude of Mathematics in Art (in press, Bright Sky Press, spring 2011)
  Literature-Based Activities for Integrating Mathematics with Other Content Areas (K-2) (Pearson, 2007)
  Literature-Based Activities for Integrating Mathematics with Other Content Areas (3-5) (Pearson, 2007)
  Literature-Based Activities for Integrating Mathematics with Other Content Areas (6-8) (Pearson, 2007)
  Numeracy and Literacy: Teaching K-8 Mathematics Using Children's Literature (Guilford Press, 2007)