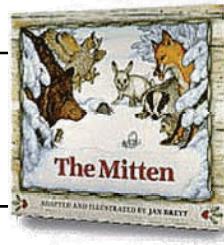# Math-Literature Connections
The Mitten by Jan Brett

How Big Is the Mitten?   a lesson on volume of a 3-dimensional object

- **Student Estimates:** Show students a mitten and several linking cubes. Ask students to esti-
  mate how many cubes would fit inside the mitten. Record student estimates and ask students
  to explain how they figured out their estimate and why they believe it is correct.
- **Data Collection:** Provide mittens and linking cubes for each small group. Ask students to
  work together to fill the mitten with cubes. Be sure to explain what *filled* means for your class
  (e.g. no cubes sticking over the edge, or no cubes falling out when you hold the mitten in the
  middle).
- **Organizing Data:** Draw a line plot on the chalkboard or chart paper. Ask student groups to
  make an X to mark how many cubes they fit into their mitten.
- **Analyzing the Data:** Lead a discussion about the data, including an informal discussion of
  both **range** (everyone in the class was between ____ and ____) and **mode** (*most* groups
  were able to fit about ____ cubes in their mittens) to introduce the mathematical language of
  statistics.
- **Math Vocabulary:** Tell students that when mathematicians talk about *filling an object*, they
  are talking about the **volume** of the object. Also model using the terms **range** and **mode** in
  discussing the line plot.

How Many Cubes Will Cover the Mitten?   a lesson on area of a 2-dimensional object

- **Student Estimates:** Show students a mitten cutout and several linking cubes. Ask students
  to estimate how many cubes would completely cover the mitten. Record student estimates
  and ask students to explain how they figured out their estimate and why they believe it is cor-
  rect.
- **Data Collection:** Provide mitten cutouts and linking cubes for each student. Ask students to
  completely cover the mitten with cubes. Be sure to explain that no cubes should hang over
  the edge of the mitten.
- **Organizing Data:** Draw a line plot on the chalkboard or chart paper. Ask student groups to
  make an X to mark how many cubes they fit on their mitten.
- **Analyzing the Data:** Lead a discussion about the data, including an informal discussion of
  both **range** (everyone in the class was between ____ and ____) and **mode** (*most* groups
  were able to fit about ____ cubes on their mittens) to introduce the mathematical language of
  statistics.
- **Math Vocabulary:** Tell students that when mathematicians talk about *covering an object*,
  they are talking about the **area** of the object. Also model using the terms **range** and **mode** in
  discussing the line plot.

Graphing Ideas: *Do you wear mittens or gloves in the winter?*

- Create a clothespin graph
- Create a Venn diagram which allows for students who wear both, depending on the day
- Create a pictograph with mitten and glove cutouts
- Create a bar graph using colored index cards with each student's name that can be placed
  end to end to form bars