Strand: Measurement  
Band: Middle Years  
Standard: 4  
Year Level: 7

Key Idea
Students understand attributes, units and systems of measurement. They research and report on how measurement is used in the home, community and paid workforce, and recognize transferability between these and other contexts. [In] [T] [C] [KC1] [KC2] [KC6]

Students recognize and develop and report on connections between mathematical ideas and representations. They employ logical strategies to solve problems in measurement situations, and reflect on the reasonableness of their answers. [T] [KC1] [KC2] [KC6]

Outcome
4.4 Selects appropriate measurement units and scale to conduct collaborative research into issues associated with the social or physical world. [In] [T] [C] [KC1] [KC4]

4.5 Applies a variety of techniques and tools, uses a range of measurement formulae to solve problems. [T] [KC6]

Task/Activities
Unit of work comprising two stages
1. Lead up collaborative investigation
   - Measure the tissue box provided in as many ways as possible. Present in published form showing all mathematical recording.
2. Individual assessment
   - Using the lolly box provided ….
   - Measure the length, width, height and mass.
   - Draw an accurate net of the box and label with measurements.
   - Calculate area, surface area and volume.

Examples of evidence towards achievement of outcomes
4.4 Evidence of collaborative research is sourced from lead up activity as students research the tissue box in pairs, then deal with real world situations of measurement as they select suitable units of measurement and scale for presentations of drawings.

4.5 Demonstrated as students draw a net of the box, choose appropriate units and accurately calculate area, surface area and volume of box.
Task Description

1. Lead up activity
Pairs of students choose a box from the variety of tissues provided. Provide as wide a variety of boxes as possible so that comparisons can be made and mathematical class discussions can be held throughout the investigation.
Pose the problem – “Measure the tissue box in as many ways as possible”
Brainstorm - the variety of ways the box can be measured and leave this list as a criteria check in the classroom.
Examples include …
- Area of box
- Area of tissues
  - one tissue
  - all the tissues
  - all the layers of tissues
- Surface area of box
- Area of opening of box
- Weight of box, with and without tissues
- Weight of tissues
- Weight of one tissue
- Length of tissues when laid out end on end
- Cost of tissues
- Cost of one tissue

As groups of students need new learning, run class or group workshops and explain the required information and the preferred way of setting out to ensure all mathematical recording is accurate and in the preferred form.

2. Assessment task
Students are provided with a lolly box. Choose a variety of shapes. More able students may use hexagonal prisms (Toblerone), triangular prisms (Toblerone) while others use rectangular prisms from Smarties or M&M’s