

# Changing Rooms!

## Mathematics and Statistics, Level 2

### THE LEARNING CONTEXT:

In this unit students will become budding interior designers as they are given the challenge of re-designing their bedrooms within a set budget of \$3,000. The students will need to use measurement skills as they measure the floor area of their bedrooms, map out where the furniture will be placed and draw their “new” bedrooms to scale. Students will also need to apply number knowledge and strategies as they estimate the required quantity and price of paint, wallpaper, and fabric, and then calculate the overall furnishing costs.

During the first stage of the unit students will explore the different furnishing choices available to them. A local interior designer could be invited to visit the class to share ideas and offer advice to students. Advertising brochures for home decorating items and furniture could be studied to give students an idea of the different products and their costs. Students may even go on a class trip to furniture and home décor shops to measure particular items and receive further expert advice.

Students will then make decisions on how they will re-decorate their bedrooms ensuring that they keep within the set budget and that the desired furniture fits the floor space. Students will present their bedroom designs to their classmates. They will need to show a scale drawing of their “new” bedroom and an expenditure budget outlining where the money will be spent.

Approximately 12 lessons

### Achievement Objectives:

#### MATHEMATICS AND STATISTICS CURRICULUM (Level 2)

##### Number strategies

Use simple additive strategies with whole numbers and fractions.

##### Geometry and measurement:

###### Measurement:

Create and use appropriate units and devices to measure length and areas.

### Enterprising Attributes:

- Generating and using creative ideas and processes
- Identifying, recruiting, and managing resources
- Planning and organising
- Collecting, organizing, and analyzing information
- Communicating and receiving ideas and information

Teachers to observe and collect evidence of these enterprising attributes in action.

### Mathematics and Statistics Learning Outcomes:

Students will be able to:

1. Measure the floor-space of their bedrooms using metres and centimetres.
2. Identify and evaluate the various costs associated with decorating a bedroom.
3. Select products for their own bedroom makeover and operate within the set budget.
4. Draw a map of their ‘new bedrooms’ to scale.

### Resource Requirements:

- Expenditure Budget
- Interior designer
- Home décor and DIY advertising brochures
- Home décor and DIY shops
- Internet
- Telephone

# Teaching and Learning Sequence

NB: Teachers are encouraged to gauge the prior knowledge of their students before implementing each unit so that they can provide personalised and meaningful learning opportunities. The teaching and learning sequence provided in each unit is to be viewed as a guide only. Teachers will need to adapt this sequence to meet the needs of their students, school and community.

The future focus issue of enterprise can be explored during this unit. Students will need to be innovative and enterprising when they work within a fixed budget to decorate their room. It is a reality that we have limited money to spend, however the challenge is to gain the best value from that limited amount. Students will learn that they have a range of choices, but different ones bring different benefits; choosing the best one for them is about being enterprising.

The numbered activities listed below are learning steps rather than lessons. Teachers may choose to combine two or three learning steps into one lesson. Alternatively, they may spread one learning step out over several lessons. This will be largely dependent on students' prior knowledge and their subsequent learning needs.

<p><b>Getting started:</b></p> <p>The teacher shares a video recording of a reality television show on home decorating such as 'Changing Rooms' or 'Mitre 10 Dream Home' (if possible, source a makeover of a child's bedroom). The teacher tells the class that they have had a "huge" pay rise and that they are going to give each student \$3,000 to re-decorate their own bedrooms.</p> <p>The class creates a timeline for the unit with key dates for critical actions. This process will make the teaching sequence of the unit explicit to the students.</p>	<p style="text-align: center;"><b>LINKS TO BES</b> <b>Best Evidence Synthesis</b></p> <p><b>5. Quality teachers link learning to real life experiences.</b></p>
<p><b>Teaching Sequence:</b></p> <ol style="list-style-type: none"> <li>The students look at other examples of bedroom 'makeovers' by watching further episodes of home decorating shows and/or looking through home and garden magazines. Students make a large poster of decorating ideas and display it on the classroom wall – this poster could include children's quotes (eg: "I like the rocket bed that I saw on the TV show"), children's sketches of what they have seen, and magazine cut outs. <b>Collecting, organising and analysing information</b></li> <li>The students split into groups with similar design tastes to discuss what sort of bedroom they would like to have – What colour/s could it be? Would the room have a theme? What kind of furniture could it have? What type of bed? Etc. Students' shared ideas are recorded and pasted on a large class brainstorm sheet. <b>Generating and using creative ideas and processes</b></li> <li>Each student begins a personal planning book which will document the entire interior design and decoration process – they fill the first pages of their planning book with a wish-list for their dream bedroom and initial sketches of their ideas. <b>Generating and using creative ideas and processes, Planning and organising Innovation, inquiry, and curiosity</b></li> </ol>	<p><b>2. Quality teachers encourage and support student motivation.</b></p>

<p>4. The teacher tells the students that they will need to measure and draw the floor space of their bedrooms. The teacher introduces the concept of 'drawing to scale' by measuring and drawing the classroom floor space, ceiling height, and window dimensions. It may be useful to make 1 metre equal 10 centimetres when carrying out this activity or make 1 metre equal 5 squares on grid paper. The students practise drawing to scale independently by measuring and drawing the floor space of the school hall, library and/or staffroom. (Learning Outcomes 1 and 4)</p> <p>5. Students draw the floor space of their bedrooms for home learning. These floor maps can be glued into their planning books. Students also measure the ceiling height and window dimensions. Measurements are written into their planning books. (Learning Outcomes 1 and 4) <b>Collecting, organising and analysing information, Planning and organising</b></p> <p>6. Students brainstorm all the changes that could be made to a bedroom when re-decorating. Start with basic changes such as a new duvet, bed, curtains, etc. Then move onto more creative and luxurious changes such as new cushions, light fittings, sofa, artwork, beanbags, TV, etc. Students re-visit their wish-list (in their planning book) and add further ideas if desired. <b>Generating and using creative ideas and processes, Planning and organising Innovation, inquiry, and curiosity</b></p> <p>7. Invite an interior designer to school to talk to the students about bedroom makeovers. Ask the designer to give students ideas about what can be done to transform a bedroom. If possible, get the designer to share concept drawings and photos of a bedroom makeover that they have already done, or get them to plan a bedroom makeover with the students. Ask the designer to explain to the students how they use measurement and number skills in the design process. <b>Communicating and receiving ideas and information</b></p> <p>8. The teacher and students devise a list of success criteria for the completed bedroom designs – the criteria needs to link to the learning outcomes of the unit and could include interior design 'tips' gained from the TV shows, magazines and/or interior designer. The criteria could include the following:</p> <ul style="list-style-type: none"> <li>• Bedroom plan is drawn to scale</li> <li>• Bedroom makeover is kept to budget</li> <li>• Bedroom design includes original ideas</li> <li>• Bedroom furniture does not overcrowd the space, etc. <b>Excellence</b></li> </ul> <p>9. Students explore the options that they have for their bedroom makeovers by looking at a range of products in home decorating and home décor shops. Students could look at relevant advertising brochures and/or go on a class trip to visit appropriate stores. Students will need to record the prices of the various products and source measurements of any furniture to assist with their decision making. They will need to cut out pictures of the products or take photographs. (Learning Outcome 2) <b>Identifying, recruiting and managing resources</b></p>	<p><b>3. Quality teachers create home learning programmes that support in class learning and meet the needs of the students.</b></p> <p>10. Quality teachers give students clear information about learning outcomes and involve students in the process of setting specific learning goals.</p> <p>6. Quality teachers plan a range of activities that engage students, enabling them to complete the learning process, so what is learned is remembered.</p>
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<p>10. The students investigate the price of paint and wallpaper by visiting a DIY shop or interviewing a DIY shop owner. Students will need to source paint charts and wallpaper samples and find out how much wall space can be covered by a can of paint and/or a roll of wallpaper. They may also investigate the cost of curtains or blinds. (Learning Outcome 2) <b>Identifying, recruiting and managing resources</b></p> <p>11. The class makes 'product posters' to display around the classroom that illustrate the range of choices that they have: There could be a 'product poster' about beds which has pictures of various beds and bedding with prices and measurements recorded alongside. Another 'product poster' could feature window dressings with curtain options, fabric samples and price indicators stuck on, etc. These posters will be a point of reference for students when they are making design decisions. (Learning Outcome 2) <b>Identifying, recruiting and managing resources</b></p> <p>12. The class may need to spend several lessons exploring the number system up to 3000 and adding sums of money to enable them to work within a budget and make accurate calculations. This learning step is dependent on students' prior knowledge. (Learning Outcome 3)</p> <p>13. The teacher models a bedroom makeover in a guided maths lesson by re-designing their own bedroom. The teacher will need to supply a scale drawing of their own bedroom floor space and wall space on a poster. They will also need an enlarged copy of an expenditure budget (*) to record their spending. The teacher talks through their design decisions and lists the costs on the expenditure budget. They also draw the selected furniture items to scale on grid paper, cut them out, and then stick them onto the map of their bedroom floor space.</p> <p>14. Over the next series of lessons students complete their own bedroom makeover following the same process that was modelled by the teacher. They make 'spending decisions' and record them on an expenditure sheet in their planning book. Students also draw and cut out furniture items to scale and stick them onto the map of their bedroom floor space. They may also choose to sketch and colour an artist's impression of their completed bedroom and/or include photographs of their selected products in their planning book. An extension for students could be a three dimensional model. (Learning Outcomes 3 and 4) <b>Generating and using creative ideas and processes, Planning and organising, Identifying, recruiting and managing resources</b></p> <p>15. Students present their bedroom designs to the class by sharing their scale maps and talking about the products that they have decided to buy. This talk could be a little bit like the de-brief at the end of the TV show 'Changing Rooms' where the host asks the interior designer questions such as ... "What was your most expensive item?" "What was your best buy?" etc. Students may also invite along parents, caregivers, the Principal, the interior designer, and/or students from other classes to view their bedroom designs. <b>Communicating and receiving ideas and information</b></p> <p>16. Students evaluate each other's work using the success criteria drawn up at step 8.</p> <p>17. Discuss reflective questions.</p>	<p><b>9. Quality teachers promote critical thinking (through self and peer evaluation).</b></p>
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**Reflective Questions:**

Exploring new knowledge and skills

- What mathematics skills did you learn/practise during this unit?
- How hard was it to stay within budget?
- Are you happy with your final bedroom design?
- Did you like any design ideas that your classmates had?
- Would you do anything differently next time?

Exploring what it is to be innovative and enterprising

- What step/s were you doing when you used each of the Enterprising Attributes? Break each attribute into its separate words and refine your answers.
- How could you improve on using the Enterprising Attribute/s for next time?
- Can you transfer this learning to your other topics?

Exploring further future focus issues

- How did your innovative ideas and enterprising approach help you to get the very best for your limited money?
- Why is it that we have limited money?

**Possible Assessment Activities (Teacher):**

Learning Outcomes 2 and 5: Observation of unit work - Teacher assesses student's ability to measure the floor area of their bedrooms and convert the measurements to a scale drawing. Teacher also assesses student's ability to draw furniture items to scale and place them onto their bedroom map.

Learning Outcome 4: Observation of unit work - Teacher assesses student's ability to add sums of money together and make appropriate spending decisions to stay within budget.

The following tasks from the Assessment Resource Banks offer further opportunities for teachers to assess students' ability to measure in metres/centimetres and make calculations with money:

**MEASUREMENT**

MS 2117

MS 2144

MS 2087

**NUMBER**

NM 1173

NM 1140

# Changing rooms - budgeted expenditure

Details:	\$ Income	\$ Expenditure	\$ Balance
	3,000		