**Building a tiny house/ whare**

A tiny house/whare is much smaller than a traditional house/whare. More and more people are choosing to build and live in tiny houses/whare because:

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* Many people can’t afford to buy a larger house/whare
* There isn’t enough land that can be used for housing
* Smaller houses/whare are better for the environment. For example, smaller houses/whare use less materials. They also use less power to light and heat.
* Living in a small house/whare can help people to live in a simpler way
* People who already own a house/whare can pay off their mortgages faster by selling it and buying a tiny house/whare, giving them more money to spend or save.

Ideally, tiny houses/whare are built using materials that are:

* From the immediate area
* Safe
* Environmentally-friendly
* Recycled

You have been asked to design a tiny house/whare for a retired person or couple that has a floor area of no more than 35 m².

The house/whare needs to:

* Have sleeping spaces for 3 people
* Be able to host at least 6 people
* Have the same appliances as a standard house/whare, for example, a washing machine, fridge, and oven
* Let in as much sun as possible for heating and light.

As an extension, you may like to limit the weight of the house/whare to 3500 kg.

Design the house for the grandparent or retired person you interviewed. Use the information they gave you about their living-space needs to design the tiny house/whare. Your tiny house/whare will be evaluated on the extent that it meets these needs.

Complete this design brief. Remember to show your calculations and to include shapes used in your floor plan. You can use the template on the previous page for the floorplan.

DESIGN BRIEF Make a model of your tiny house design using 2D and 3D shapes.

Create a physical model of a tiny house that has:

* at least three features, for example, windows, doors, furniture
* uses at least three shapes. Calculate:
* the surface area of items (i.e. the amount of paper required)
* the volume of each of the shapes (i.e. the amount of plastic you would need to print a 3D model).

Evaluate your design based on your interview with a retired person or another potential stakeholder. Show any calculations you have made.

Draw sketches of your tiny house designs here, including a rough sketch of your final design.

Extension

Downsizing is a term used to describe deliberate actions to reduce the number of things a person owns. People who are getting close to retirement/ whakatā often start downsizing so that they are ready for the next stage of their lives. This can include moving into a smaller house/whare.

**Task**

Choose an apartment, unit, or tiny house/whare with no more than 2 rooms that is advertised for sale on TradeMe.

* Use the rateable value (RV) of the property to estimate the selling cost.
* Use a mortgage calculator to work out what the fortnightly mortgage repayments will be if you have a 20% deposit and a 20-year mortgage.
* Estimate the cost of your tiny house/whare using a build cost of $2000 per m². Find a piece of land that you can buy to put it on using a real estate website or TradeMe.
* Explore the cost of a 20-year mortgage for your tiny house/whare if you have a 20% deposit.
* Justify whether building a tiny house/whare is a more financially sustainable option than buying an existing apartment, unit, or tiny house/whare.