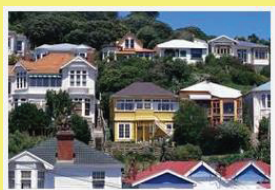


Take This

“Little boxes on the hillside...
...and they all look
just the same.”

from the song by Malvina Reynolds



Years 3-4

GEOMETRY

Shape, position and orientation

Develop language of shapes, curves, lines, corners/vertices, sides/faces, edges, slope/angle.

Pose the question: What do you notice about the shape of buildings that we live in, have lessons in and that our parents work in? Go for a walk in the local area. Have students write down their observations (“straight walls, square shapes, boxes, cubes, cuboids”).

Pose the question: “What if you lived in a cylinder, a dome (hemisphere), an A-frame house (triangular prism), a cone, a square based pyramid?” Explore each solid shape, list and its features (faces, edges, vertices). Have student pairs select one of the named shapes, and investigate an answer to the question. Make materials available for student pairs to make a small cardboard model of their chose shape (with guidance).

GEOMETRY

Provide (plastic) hemispheric bowls to those who chose the dome. Students can place a lego person, small cardboard model of themselves, inside the shape and use their imaginations to make a poster *showing and listing: The good things about living in a ___ would be, The not-so-good things about living in a ___ would be.*

Have students use boxes on a cardboard base to create a simple model of their school or neighbourhood. Have them locate key landmarks and 4 compass points. Have them give and record instructions, using the language of position and direction, to get from place to place in their model.

MEASUREMENT

Length and area

Make available to students a selection of small cardboard boxes (eg. Weetbix box, teabag box, jelly box). Provide time for students to decorate it as a house/school building, cutting door and windows in it.

Discuss why we have standard measures. Using a metre ruler, have students measure at least two dimensions of the classroom. Record appropriately.

Have students measure in cm the 3 dimensions of their box houses and record. Ask, “How big would the floor of your box house be if the length and width were measured in metres?” Discuss scale.

Provide chalk, metre rulers/measuring wheels, Have students work in pairs to measure out on a playground space, the length and width dimensions to show the answer to the question. Explore the relationship between cm and m. Discuss area, and introduce, as appropriate, the concept of square metre.

Extend this investigation by having students measure length and width dimensions of different school buildings. Have them use cm to measure and draw on paper the floor space of the measured building. Cut this out. Combine these cut shapes to construct a class floor plan of the school.

STATISTICAL INVESTIGATIONS AND LITERACY

Plan an investigation to answer the question: (Is the song right?) Do the houses of children in our class/school ‘look just the same?’

Eg. Together list exterior features such as roof slope, number of outside doors, shape of windows, steps up to the door, colour, construction material etc.

Have student pairs work choose **one** feature and identify options eg. *roof slope* (flat, sloping, pointed), *number of outside doors* (1,2,3,4, more), *....,construction material* (wood, brick, concrete, metal) etc. Create one combined survey, with all identified features and options. Participants tick one option for each feature.

- Carry out survey.
- Student pairs sort the data for their chosen feature and display the data using tally chart, dot plot, bar graph or strip graph.
- Students present data display, making statements about the data that connect with the original question and validated with reference to the data.
- As a class, look at all the data displays. List for each feature (display) the option with the highest frequency. Together, combine these and describe a house you are most likely to see (eg. white, wooden, 2 doors...etc.)

NUMBER AND ALGEBRA

As part of ongoing numeracy learning, within this context, pose problems for students to solve that require them to apply place value understanding, additive strategies with whole numbers and fractions, and simple multiplicative strategies. Have students record, explain their thinking and solutions using appropriate symbols, expressions and diagrams.

Have students look for patterns, eg. 1 ‘box house’ 4 walls, 1 roof, 1 floor; 2 boxes 8 walls, 2 roofs...write on a table and state in words the rule for number patterns.