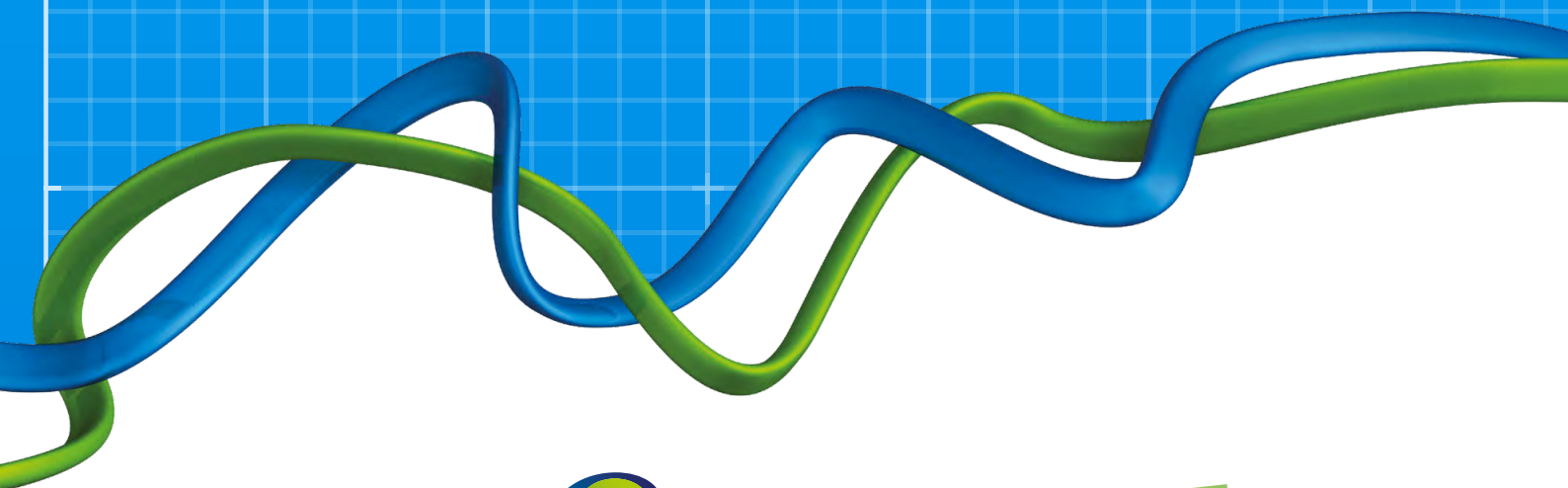
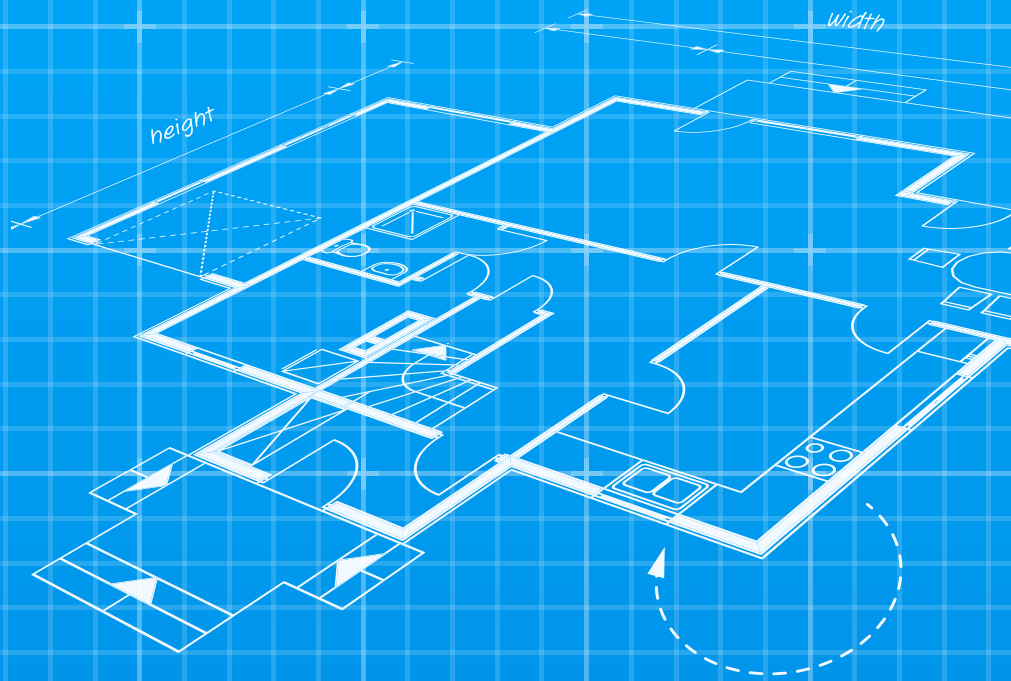


DEPLOYABLE **STRUCTURES**

# Maths beneath my feet



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This resource is a set of mathematical activities, set within the context of home improvement, which is a real life use of mathematics around the home.

# Maths beneath my feet

**In most buildings, including your home, the floor is made from either floorboards or concrete that is covered up.**

There are a number of different floor coverings, but some of the most popular ones are carpets or some form of wood effect such as laminate.

Examples of different floor coverings.



## **X** Activity 1 – Discussion

Spend a few minutes thinking about and discussing with others what other types of flooring you have come across.

**ACTION:** Write down your answers.

**Flooring used depends on preference as well as which room you are going to cover. For example, floor tiles are often used in kitchens and bathrooms as spills are easy to clean.**

## **X** Activity 2 – Discussion

With each of the types of flooring you stated in **Activity 1**, discuss with others why each may be used. It may be easy to start with the flooring in your classroom.

**ACTION:** Write down your answers.

An example of tiled flooring used in a kitchen.

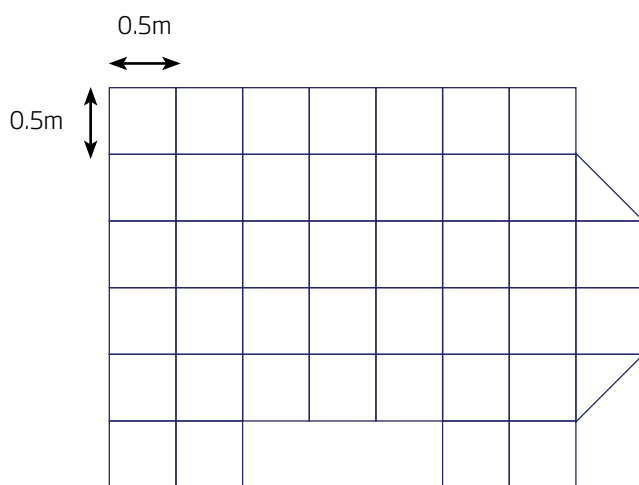


### **X** Activity 3 – Calculation

The first thing to do before deciding on what flooring to use is to measure the room and work out the area. **Figure 1** is a room layout of a dining room that needs to be covered that has been broken down to 0.5 m squares. Calculate the area needed to be covered and show two ways of how you got to your answer.

#### **ACTION:**

**Make sure you write down your answers and show your workings.**



**Figure 1**

### **X** Activity 4 – Discussion

**Most carpets come in rolls 4 m or 5 m wide and can be cut off to the length you need.**

Based on your calculation in **Activity 3**, how much carpet would be left over from a 4 m wide roll? State this in  $\text{m}^2$  and as a ratio of carpet used against carpet left over.

**ACTION:** Write down your answers.



**Most carpets come in rolls and can be cut off to the length you need.**

### **X** Activity 5 – Carpet tiles vs rolled carpet

**As well as carpets on rolls, you can get carpet tiles that come in various sizes, but are all square. These are normally used in bathrooms, kitchens and large offices.**

What are the advantages of using carpet tiles over a carpet on a roll?

**ACTION:** Write down your answers.



**Carpet tiles come in various sizes but are all square.**



## X Activity 6 – Carpet costings

You have decided that a plain colour will do and you are just going to work out the cost of carpeting the room in **Activity 3** with either a carpet from a roll or carpet tiles. Remember you may have to buy more than you need due to standard sizes.

Work out which is the cheapest based on the costs shown in Table 1.

**ACTION:** Write down your answers.

Table 1

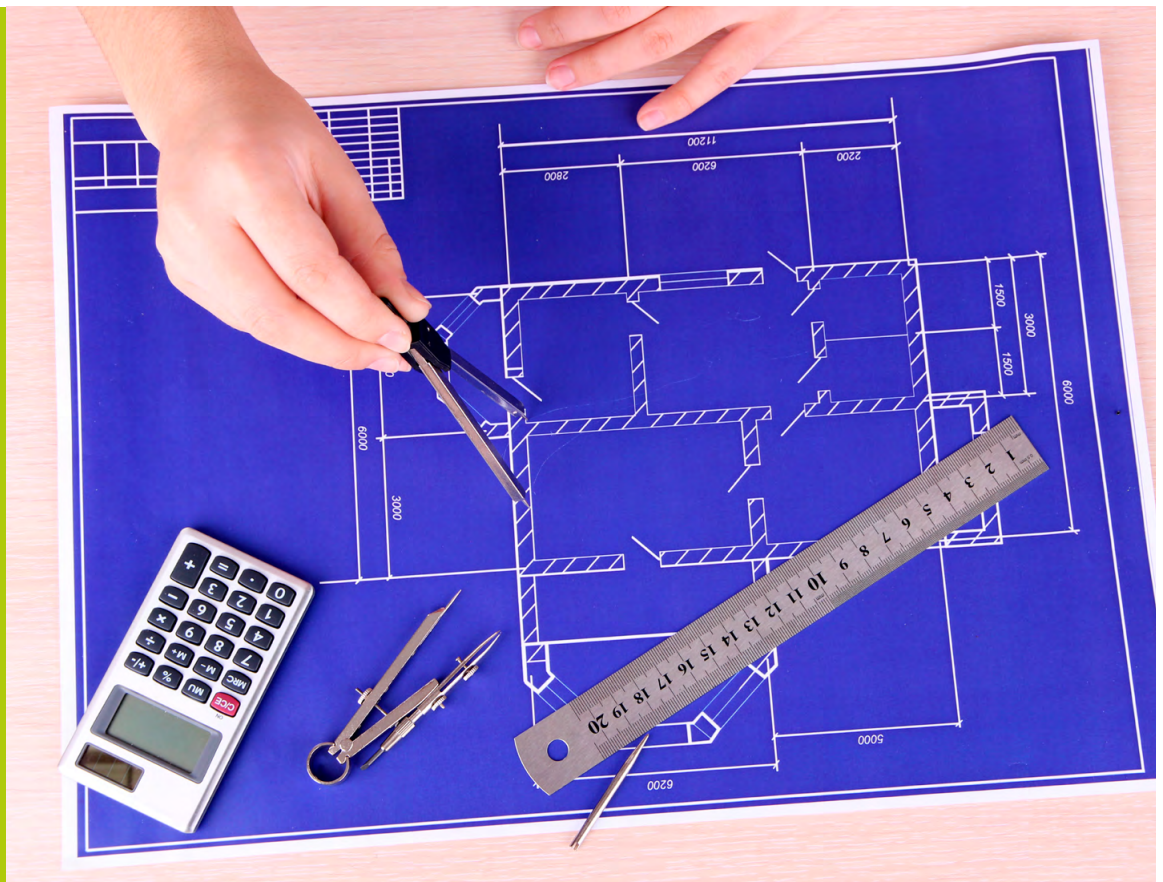
Carpet types	Costs
4 m rolls	£8.99 per m <sup>2</sup>
A box of tiles with a total coverage of 2.5 m <sup>2</sup> . Each tile is 500 mm by 500 mm	£20.98 per box

## X Stretch and Challenge Activity 1

**Draw to scale your current classroom floor on squared paper and calculate the area that needs to be covered.**

Calculate the cost of covering this floor with carpet tiles based on the costs given in Table 1.

**ACTION:** Write down your answers.



## **X** Stretch and challenge Activity 2

**Until now we have only been looking at carpeting a room. What about putting wallpaper on the walls? Wallpaper comes in widths of 52 cm and 10 m lengths.**

Use your classroom for dimensions and work out how many rolls you will need. First make a list of what you will need to do and think about any issues you will need to consider.

**Hint:** Draw the walls to scale on squared paper.

**ACTION:** Write down your answer.



Wallpaper comes in rolls and can be cut to the length you need

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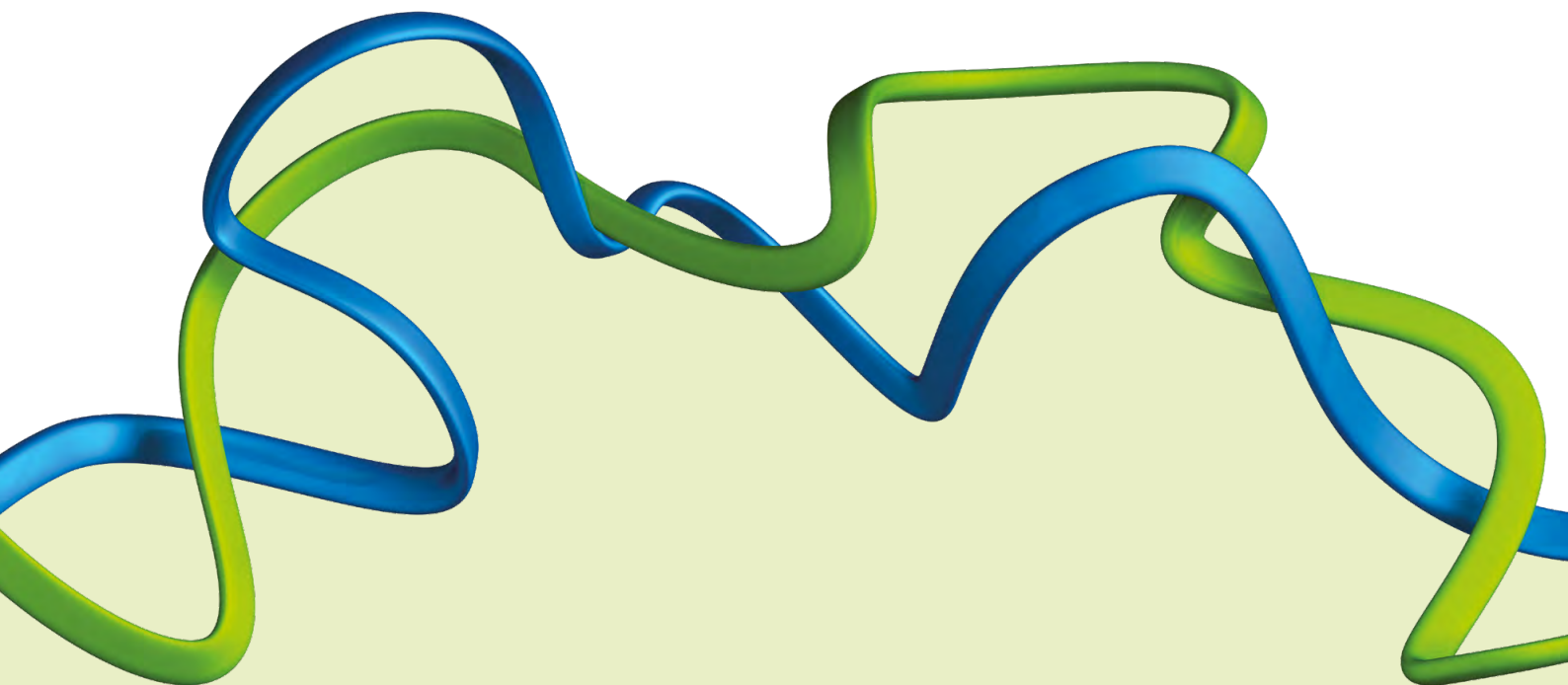
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