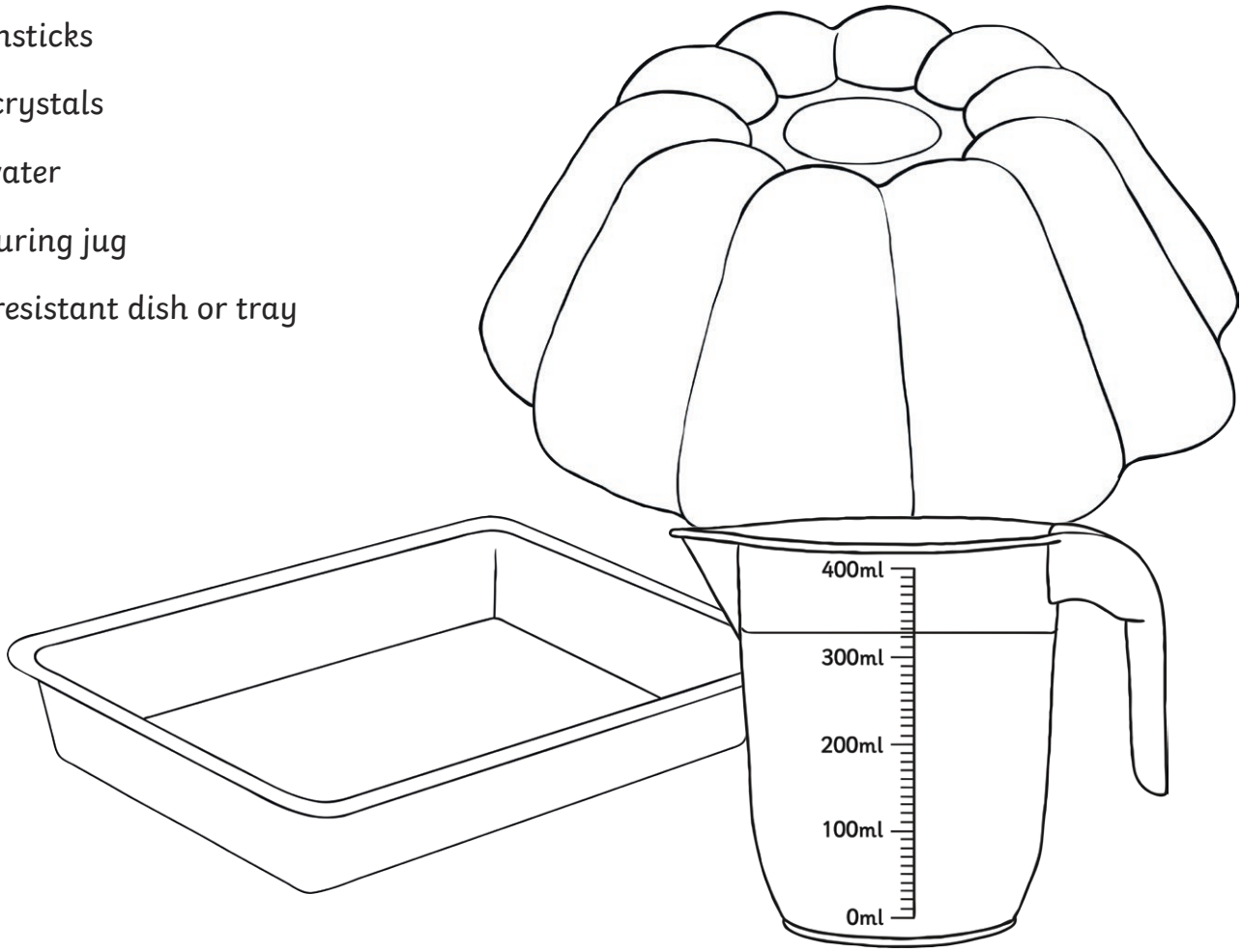
Matchstick Tower Activity

Every year, Japan is affected by approximately 1500 earthquakes. These earthquakes range in severity and magnitude and can cause widespread damage to infrastructure. The country experiences a higher number of earthquakes as it is located on the Pacific 'ring of fire', at the edges of several continental and oceanic tectonic plates. Earthquake-resistant structures are buildings designed to withstand earthquakes. While no structure can be entirely safe of damage from an earthquake, the goal of earthquake-resistant construction is to erect structures that fare better during seismic activity than a normal structure.

Your challenge is to design an earthquake-resistant structure. You will test your design in a 'mini earthquake'. You will create your structure using mini marshmallows and matchsticks to create the framework. The set jelly will act like the earthquake, creating an unstable and shaky foundation to test how solid your structure is.

To create the prototype of your design, you will need:

- mini marshmallows
- matchsticks
- jelly crystals
- hot water
- measuring jug
- heat resistant dish or tray



1. Follow the directions on the packet of jelly crystals to make your jelly. Mix the hot water with the crystals in the measuring jug.

Always ask an adult for help with hot water!

2. Pour the jelly mixture into the baking dish and put into the fridge until firm.

3. Start your research of Japanese earthquake-resistant buildings. What are the features that help them to withstand an earthquake with minimal damage? Draw and label your design using the planning sheet. Use your research to help you create your design.

4. Construct the prototype for your design in the tray of jelly. Make sure to work fast before your jelly melts and follow your design!

5. Test your tower out with a mini earthquake by shaking the tray. How did your tower go? Did it stay standing or did it collapse straight away? How could you improve your design to minimise the damage if an earthquake did occur.

6.Assess your design using the earthquake journal. Can you adapt your design to make your structure more stable in the event of an earthquake?