

# How to Bake Scientifically Accurate Cake Planets

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Created by self-taught chef Rhiannon from [Cakecrumbs](http://cakecrumbs.me), these spherical cakes are scientifically accurate representations of the subsurface on Jupiter and Earth, right from the outer atmosphere down through the crust, mantle, and inner core.

To see how they did it, or to try it yourself, you can find a detailed [step-by-step recipe](#) and video on the CakeCrumbs website:



<http://cakecrumbs.me/2013/08/01/spherical-concentric-layer-cake-tutorial/>







## Spherical Concentric Layer Cake Tutorial

Posted in [Tutorials](#) by [cakecrumbs](#)

This tutorial will show you the most basic and least equipment-heavy way of baking the concentric layer cake as seen in both the [Earth cake](#) and [Jupiter cake](#). You can stop at half way and just make a hemisphere cake, or make two hemispheres and join them into one as in this video.

How big you make the cake is up to you. For the Earth cake I baked the largest layer in a 2 litre pudding basin. As the Jupiter cake one was for a tute and not for a group of people, I only baked it as big as a 1 litre pudding bowl. There's no other reason why I baked the sphere smaller – you can make it as big or small as you like.

Now, as for the equipment required, you will need a set of any three hemisphere tins or bowls that can fit inside one another. Pudding bowls are great for this if you don't want to buy hemisphere pans, though you may need to trim it to make it round (I'll show you how to do that).

Any oven-proof ceramic bowls will work fine. If you're using glass as I do, make sure it's oven safe and heat-treated. Some glass bowls will say 'heat-resistant' but that only means they won't explode in your dishwasher.



Baking times will vary based on how big your bowls are. I'll give you some guides on that, but do keep a careful eye on your cakes and use your inner baking muse to judge cooking times.

You can use any recipe you like for these cakes. For the centre, I recommend a moist recipe as the centre cake *does* get baked thrice. For the outer recipes, you need to use a buttercake mixture of some type. Any cake that gets you to cream the butter and sugar together at the first step should be fine, as the batter is thick enough so that the cakes won't sink. Any mudcake, traditional sponge, oil-based recipe or one that melts the butter will probably not hold the weight of the cakes while it bakes.

Lastly, for the colouring you can use any colours you like. Buttercake isn't delicate, so you can use anything from powder, to liquid, to gel paste. If you're not sure how much you need, add a little at a time until you're satisfied with the result. Keep in mind that colours will lighten during baking. You can also make your own colours from things like fruit and vegetable products, and making home made food dyes is really easy. Similarly, many supermarkets sell food-derived colours so if you're the type of person to freak out over lab-produced ones you have plenty of options available to you.

Here's how to make, bake and assemble the cake:

As a word of caution, don't be tempted to under-bake the cakes. I've had a number of people ask me if that's the way to do it, and the answer is categorically no. When you remove the cake from the oven and let it cool, the cooking process stops. You can't make it resume by placing it back in the oven. All that will happen is you'll have areas of uncooked batter throughout your cake, and that will jeopardise the structural integrity as well as the look and taste of your cake. Bake the cakes to completion like you would normally and don't worry about it being dry. By covering the cake in batter and only trimming it down at the end, as shown in the video, you'll protect the innards for the cake and it won't dry out.

These are the recipes I used:

## Layer 1: Chocolate Mudcake

### Ingredients

95g (3 1/3oz) plain flour 110g (4oz) caster sugar 20g (3/4 oz) cocoa powder

1/4 tsp salt

1/2 tsp bicarbonate soda

40ml (1 1/3 fl oz) vegetable or olive oil

125ml (4 1/4 fl oz) tepid water

1 tsp apple cider vinegar

1 tsp vanilla essence

### Method

1. Preheat oven to 180°C (160°C fan-forced/350°F). Grease or line hemisphere tin/bowl.
2. Sift all the dry ingredients into a medium sized bowl; combine the wet ingredients in a small jug. Pour the wet ingredients into the dry and whisk until completely combined.
3. Pour into hemisphere moulds and bake for 25-30 minutes, pending on the size of the mould

**Note:** this recipe should only be used for the central layer

## Layer 2: Almond Buttercake

### Ingredients

150g (5 1/4oz) butter, room temperature 1/2 tsp almond essence 2/3 cup (150g/ 5 1/4oz) caster sugar

2 free range eggs, lightly beaten

1/3 cup (50g/1 3/4oz) self-raising flour

1/2 cup (75g/ 2 2/3oz) plain flour

1/2 cup (60g/2oz) almond meal

food colouring (optional)

### Method

1. Preheat oven to 180°C (160°C fan-forced/355°F). Grease or line hemisphere tins/bowls.
2. Cream butter and sugar together until light and fluffy, beat in the eggs one at a time, then beat in the almond essence and food colouring if using.
3. Fold in flours and almond meal a third at a time until just combined.
4. Transfer mixture to hemisphere tin or tray and bake

Baking times: approx 33-35 minutes for 1 cup capacity hemisphere tins. For a 1 or 2 litre bowl, drop the temperature 20°C and bake for 1 1/4 to 1.5 hours.

## Layer 3: Vanilla Madiera Sponge

### Ingredients

160g (5 2/3oz) butter, room temperature 160g (5 2/3oz) caster sugar 2.5 – 3 free range eggs

80g (2 3/4oz) plain flour

160g (5 2/3oz) self-raising flour

**Note:** this is enough for a 1 litre pudding bowl. Double the quantity for a 2 litre bowl. If baking two halves for a sphere, use the 2.5 eggs. If only baking one, round it up to 3 eggs.

### Method

1. Preheat oven to 160°C (140°C/325°F). Grease or line hemisphere moulds.
2. Cream butter and sugar together until light and fluffy, beat in the eggs one at a time, then beat in the almond essence and food colouring if using.
3. Fold in flours and almond meal a third at a time until just combined.
4. Transfer mixture to hemisphere tin or tray and bake.

Baking times: approx 33-35 minutes for 1 cup capacity hemisphere tins (bake at 180°C). For a 1 or 2 litre bowl, bake for 1 1/4 to 1.5 hours.

# Buttercream

## Ingredients

1/2 cup (125g/4oz) unsalted butter, room temperature 1 tbsp (20ml) milk 3 cups (375g/12oz) icing (confectioners sugar)

optional colours of flavourings

## Method

1. Beat the butter until pale and creamy; beat in the milk and any flavourings/colourings to be used.
2. Beat in the icing sugar a little at a time, until all combined. If mixture is too stiff for spreading consistency, beat it a little more milk.