HOW TO REDUCE A CAKE RECIPE TO FIT A SMALLER SIZED TIN

Caroline’s Easy Baking Lessons

Since I am often asked how to reduce a recipe to fit a smaller cake tin, I decided to provide you with the formulas to make it simple for you to reduce your ingredients.  There will be more blogs on increasing to a bigger cake tin, as well as a table of alternative tin shapes and sizes when you don’t have the one the recipe calls for.

So I have listed ***standard cake shapes and sizes*** I believe are available here in the UK & in the states and Canada.  If you know of anymore, I missed, please get in contact via the website of Facebook and I will gladly update it.  At the end of the formulas, I will give some  examples so everyone is clear how to do this, either using the***% button*** *on* ***a calculator (or more realistically your phone)****, or by* ***multiplying by the relevant decimal*** (and I will refer to it as a ***‘factor’***).

When it comes to not a whole number, here’s an example – if the answer for say flour is 258.61 g, then round to 259g.  (When the number after the decimal point is 5 or higher, you round up to next whole number.  And if less than 5, reduce to the next lowest whole number).  So  374.21g would be 374g.  When it comes to eggs, use your judgement if it’s not a whole number.  The size of the egg will also play a part in this.  Adding half or 1/4 of an egg more, will not make too much difference.

Note that reducing from a round tin to a smaller round tin, has the same formula for reducing from a square tin to another smaller square tin.  ***So the formulas below do not apply for changing tin shape.***  At the end I will also discuss how to reduce your ingredients when using cups instead of grams or ounces.

**ROUND & SQUARE – 8″ (20.3cm)**

|  |  |
| --- | --- |
| **REDUCE TO TIN** | **MULTIPLY BY** |
| *7″ (17.8CM)* | 79% or 0.79 |
| *6″ (15.2cm)* | 57% or 0.57 |
| *5″ (12.7cm)* | 40% or 0.40 |
| *4″ (10.1cm)* | 24% or 0.24 |

*Reducing From A 8″ (20cm) Tin*

**Examples:**

* 425g flour  –  425 x *0.57 (57%)* =  242.25g becomes 242g
* 4 eggs  –  4 x *0.79 (79%)* = 3.16 so use ***3 eggs***
* 2 tsp baking powder – Think of 2 tsp as same as *16 x 1/8 tsp*
* So  16 x 0.57 (57%) = 9.12  & round down to *9*
* And *9/8* tsp is the **same as** *1 + 1/8 tsp* which is easier to use.
* If you don’t have an 1/8 tsp, just half fill a 1/4 tsp\*\*

\*\*\*You can also skip the converting to 1/8tsp if you are good with small fractions & just calculate ‘2 x 0.57 = 1.14 tsp’. But for most, 0.14tsp is not a known factor. See below.

**METHOD 2 FOR CALCULATING**

You can use a calculator and just multiply my factor (the decimal or % in the tables), by the ingredient amount.

* *2 tsp x 0.57 = 1.14* but what is 0.14 tsp in a fraction?
* Method 1 – *16 x 0.57 /8 = 9.12/8 = 9/8*, which you can reduce to 1 1/8 tsp.

More Examples

* 1 1/2 tsp baking soda  – Same as *12 x 1/8 tsp*
* Factor = **24%** or **0.24**, example being reducing from 8″-4″
* Method 2 – *1.5 x 0.24 =0.36 =1/3 tsp*, & difficult to measure
* Method 1 –*12 x 0.24 (24%)* = 2.88 (2.88/8)
* I would round up to 3 & divide by 8 = *3/8* which means 3 x 1/8 tsp or 1/4 tsp + 1/8 tsp
* 240ml Veg Oil  – *240 x 0.57 (57%)* = 136.8ml
* I would use *135ml* for easier measuring on a jug. If using the ml unit on digital scales, you could use 137ml.
* ***For cup sizes I will explain further down the article.***

**ROUND & SQUARE – 7″ (17.8cm)**

|  |  |
| --- | --- |
| **REDUCE TO TIN** | **MULTIPLY BY** |
| 6″ (15.2cm) | *72%* or *0.72* |
| 5″ (12.7cm) | *50%* or *0.50* |
| 4″ (10.1cm) | *32%* or *0.32* |

*Reducing from a* ***7″ (17.8cm)*** *tin*

**ROUND & SQUARE – 9″ (22.8cm)**

|  |  |
| --- | --- |
| **REDUCE TO TIN** | **MULTIPLY BY** |
| 8″ (20.3cm) | *77.5%* or *0.775* |
| 7″ (17.8cm) | *61%* or *0.61* |
| 6″ (15.2cm) | *44%* or *0.44* |
| 5″ (12.7cm) | *31%* or *0.31* |
| 4″ (10.1cm) | *19%* or *0.19* |

*Reducing from 9″ (22.8cm) tin*

**ROUND & SQUARE – 10″ (25.4cm)**

|  |  |
| --- | --- |
| **REDUCE TO TIN** | **MULTIPLY BY** |
| 9″ (22.8cm) | *82%* or *0.82* |
| 8″ (20.3cm) | *63.5%* or *0.635* |
| 7″ (17.8cm) | *50%* or *0.5* |
| 6″ (15.2cm) | *36%* or *0.36* |
| 5″ (12.7cm) | *25%* or *0.25* |
| 4″ (10.1cm) | *15%* or *0.15* |

*Reducing from a 10″ (25.4cm) Tin*

**ROUND & SQUARE – 11″ (27.9cm)**

|  |  |
| --- | --- |
| **REDUCE TO TIN** | **MULTIPLY BY** |
| 10″ (25.4cm) | *82%* or *0.82* |
| 9″ (22.8cm) | *67%* or *0.67* |
| 8″ (20.3cm) | *52%* or *0.52* |
| 7″ (17.8cm) | *41%* or *0.41* |
| 6″ (15.2cm) | *30%* or *0.30* |
| 5″ (12.7cm) | *21%* or *0.21* |
| 4″ (10.1cm) | *13%* or *0.13* |

**REDUCING WITH MEASURING CUPS**

For measuring cups it’s not quite as easy, so purchasing an inexpensive digital scale, would be easier and actually more accurate.  Most come with grams and ounces as standard measurement units.  There is maths involved here with reducing cups, but here’s some examples to guide you.

**Cup Examples**

The smallest cup size is ***1/8 cup*** & so using that we can reduce the size using cups.

•To reduce **4 cups flour to 15%** of the original, think of *4 cups as the same as 32 x 1/8 cups* (ie. 8×4=32)

 Then *32 x 0.15 (15%)* = *4.8* and round up to *5*

 This means *5 x 1/8 cups*, which also is *2/3 cup***.**

\*\*(note – *5/8=0.625* which is close to *2/3= 0.66*)

* 4 cups again, but reducing using 0.24
* *32 x 0.24 (24%)* = *7.7* & round up to *8 =* ***1 cup***
* (ie. *8/8 = 1* so *1 cup*)
* 4 cups & reducing by 0.31
* *32 x 0.31 (31%)* = *9.9* & round up to *10*
* This means *10/8 c* = *1 & 2/8 c* = *1 & 1/4 cup*

•*32 x 0.40 (40%)* = *12.8* so round up to *13*

   This means *13/8 c* = *1 & 5/8 c or a bit more than 4/8 cup* = 1/2 cup. So say little over 1/2 cup

•*32 x 0.57 (57%)* = *18.24* so round down to *18*

   This means *18/8* = *2 & 2/8 c* = *2 & 1/4 cups*

•*32 x 0.79 (79%)* = *25.28* so round down to *25*

   This means *25/8* =*3 & 1/8 cup*

You could also use based on *1/4 cup sizes*, but this will be *less accurate*.

\*\*For info, for **flour –** *1tsp* **is approximately** *1/5 of a 1/8 cup.*

**DECREASING SQUARE 12 ” TO A RECTANGULAR 9X 13 “**

To reduce a *12″ (30.5cm) square tin* to fit a *9 x 13″ (23 x 33 cm) rectangular dish* (when both the same depth) –

• Reduce by *18.5%*, therefore *multiply by 0.815 (81.5%)*

**Example:**

• reducing *4 cups*

  multiply***32 x 0.815 (81.5%)*** = *26/8*

  & *equals 3 & 2/8* = *3 & 1/4 cups*

 • And in *grams* –

*500g* **x** *0.815 (81.5%)* **=** *407.5g* **=** *408g*

Hope this helps.  If there are any errors or anything missing, please get in contact. I also have an article on [*how to adjust a recipe for a bigger dish size*](https://easyonlinebakinglessons.com/blog-useful-information-1/f/how-to-increase-a-recipe-for-a-bigger-cake-tin).

Thanks for reading.

*Caro xxx*

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