Planning a Baking Project Over Multiple Days

Choosing the right recipe

- No "one size fits all" method for choosing recipe:
  - A minimal number of steps
  - Ingredients that are easily accessible and affordable (beware of specialty ingredients)
  - *Easy to double or triple*
  - Bake time is less than class time
  - There is a point in the recipe where you can stop and finish the next day (we'll talk more about this…)
  - Quality of time in recipes/can motions be substituted?

A Note on Time

- Recipe times represents if you had everything out and ready, you knew the recipe, and *then* someone started the clock.
- <u>Does not include/allow time for:</u>
- Gathering ingredients
- Reading the recipe multiple times
- The time it takes to do something the first time
- Making mistakes.

Chemical Leaveners

- Baking Soda: Sodium Bicarbonate – pure alkaline
  - Best baked same day, but can be baked after a 24 hour rest in fridge
- Baking powder: Baking soda + Acid (usually cream of tarter) + Thickener (usually corn starch)
  - Single acting or double acting
  - Can be baked same day or after a 24 hour rest in fridge

- Why use both?
  - Baking powder can make baked goods too acidic, but if the baked good needs more lift, you can add both

Chemical leaveners

- Most will do great with overnight rests in fridge
- Baking powder doughs can be refrigerated up to 48 hours (or frozen up to 3 months)
- Make sure dough is in airtight container/plastic wrap cover
  - Flour will oxidize overnight
  - Dough will dry out

Ingredients

— 2 1/4 cups (270g) King Arthur Unbleached All-Purpose Flour

— 1 1/2 teaspoons baking powder

— 1/2 teaspoon baking soda

— 1/2 to 3/8 teaspoon table salt, to taste

— 1/4 cup (50g) vegetable oil or 4 tablespoons (57g) unsalted butter, at room temperature

— 3/4 to 7/8 cup (149g to 174g) granulated sugar*

— 2 large eggs

— 2 teaspoons King Arthur Pure Vanilla Extract

— 1/2 cup (113g) sour cream or yogurt, (full-fat will yield the most tender muffins)

— 1 1/2 cups (213g) blueberries, fresh or frozen

— coarse sparkling sugar, for garnish, optional

*Use the greater amount of sugar if your berries are tart.

Instructions

1. Preheat the oven to 375°F. Line a muffin pan with papers, and grease the papers.
2. Measure the flour by gently spooning it into a cup, then sweeping off any excess. In a medium-sized bowl, whisk together the flour, baking powder, baking soda, and salt, then set aside.
3. In a large bowl, beat the butter or vegetable oil and sugar with a hand-held or stand mixer, until light and fluffy. Start the mixer at low speed until the ingredients are incorporated, then gradually increase speed to medium-high. If using butter, the mixture should turn almost white in color; if using oil, the mixture should look frothy.
4. Scrape down the bowl to make sure all the butter or oil is incorporated, then add the eggs one at a time, beating well after each addition.
5. Add the vanilla and sour cream or yogurt, and mix until incorporated.
6. Add the dry ingredients and mix on low speed just until the batter is smooth. The batter will be very thick, almost like cookie dough.
7. Fold in the berries by hand. If you use frozen berries, the batter will become even stiffer; don't worry about it, it's fine.
8. Scoop the batter into the prepared muffin cups, using a heaping 1/4-cup for each. Again, the batter will be thick and stiff; don't expect it to settle. Sprinkle with regular granulated or coarse white sugar, if desired.
9. Bake the muffins for 18 to 24 minutes, until a cake tester inserted in the center of one comes out clean.
10. Remove them from the oven, and take them out of the baking pan as soon as you can and transfer to a rack to finish cooling. (Leaving hot muffins in the pan creates steam that will toughen the muffins as they sit.)
11. Store leftovers for a couple of days at room temperature in an airtight container, or freeze for up to 1 month.

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Yeast leavener

- Love overnight rests
  - Deeper, more complex flavors
  - Gluten develops more slowly – greater complexity and stability
- With a 24 hour rise
  - Use cold liquid in recipe instead of warm or room temperature
  - Dough needs to rise in large container (NOT plastic bags)
  - Airtight cover to prevent moisture loss

Science of Yeast

- Yeast need a combination of
  - Warmth
  - Food
  - Time

- Desired dough temperature: 75-78° (this will allow the dough to rise in the timeframe of the recipe)

- Can we use this knowledge to change the timeframe of the recipe?

YES!

- For every hour rest at room temperature its 8-12 hours in the fridge
- Can also decrease water temperature to cold to increase time in fridge
- Generally, one rest in the fridge is best, but can do both, and it will still be OK

Ingredients

- 2 cups (454g) warm water
- 1/4 cup (50g) granulated sugar
- 2 1/4 teaspoons active dry yeast or instant yeast (1 packet yeast)
- 3 cups (340g) King Arthur Golden Wheat Flour
- 1 tablespoon (18g) table salt
- 1/4 cup (50g) vegetable oil
- 3 cups (360g) King Arthur Unbleached All-Purpose Flour

Instructions

1. Weigh your flour; or measure it by gently spooning it into a cup, then sweeping off any excess. In a large bowl combine the water, sugar, yeast, and 2 cups of the golden wheat flour. Let the mixture rest for a few minutes, until bubbles form. Stir in the remaining 1 cup golden wheat flour, the salt, and the oil.
2. Stir in 2 cups of the all-purpose flour. Sprinkle an additional 1/2 cup flour over the sticky dough, mixing it in with a spatula or your hands.
3. Sprinkle some of the remaining 1/2 cup all-purpose flour on a clean work surface. Place the dough onto the work surface and knead it for 5 minutes, adding a bit more flour if needed to prevent sticking.
4. Alternatively, knead the dough in the bowl of your stand mixer; or in the bucket of a bread machine set on the dough cycle. Add the final 1/2 cup flour as needed to create a soft, smooth dough.
5. Let the dough rest while you scrape out your mixing bowl and wipe it with oil.
6. If you're kneading by hand, knead the dough a few minutes more; it should feel bouncy. Place it into the oiled bowl, and cover with plastic wrap.
7. Place the dough somewhere warm (65°F to 75° is ideal) to rise until double in size, about 1 1/2 hours.
8. Gently deflate the dough, and divide it in half. Shape each piece into an 8" to 9" log. Place each log into a lightly greased loaf pan, or onto a lightly greased or parchment-lined baking sheet.
9. Tent the loaves with lightly greased plastic wrap, and let them rise for 30 minutes.
10. While the loaves are rising, preheat your oven to 375°F.
11. Uncover the bread, and bake it for about 30 minutes, until the crust is golden brown. If you have a digital thermometer, the internal temperature at the center will be about 190°F.
12. Remove the bread from the oven, and transfer it to a rack to cool. Wrap completely cooled bread in plastic, and store at room temperature for several days; freeze for longer storage.

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A-B Schedule

- A little trickier but still doable!
- Single rise doughs will be a great starting point
- Use a fortified yeast or sourdough starter if possible
- Yeasted breads will taste more like sourdough
- Potential health benefits of a long rise dough

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Modifying Recipes

- Once you understand gluten development, you can adjust steps in recipes to better suit your classroom
- Change how steps are preformed
- Change order of steps
- Change time


Using AI


Using AI
everyone thinks that AI is the way of the future, but bread is over 10,000 years old, and AI can't make bread.

find a recipe for bread that takes 3 days, each day taking no more than 1 hour

Here's a 3-day bread recipe that should fit your timeline—each day taking no more than 1 hour. This recipe uses a slow fermentation process to develop flavor, and requires minimal active time.

3-Day No-Knead Sourdough-Style Bread

Ingredients:

- 3 1/4 cups all-purpose flour (plus extra for dusting)
- 1 1/2 cups lukewarm water
- 1/2 tsp active dry yeast
- 1 1/2 tsp salt
- 1 tbsp honey (optional, for flavor)

Day 1: Mixing and First Rise (About 1 hour)

1. **Mix the dough**: In a large bowl, combine the flour, yeast, and salt. Add the honey, if using, and pour in the lukewarm water. Stir with a wooden spoon or your hand until it forms a shaggy dough. Don't overmix; it should look rough.
2. **Rest the dough**: Cover the bowl with a damp cloth or plastic wrap and let it sit at room temperature for 12-18 hours. This is your first rise, so leave it in a warm spot (but not too hot) in the kitchen.

Day 2: Shaping and Second Rise (About 1 hour)

1. **Shape the dough**: After 12-18 hours, your dough should have risen and bubbled. Turn it out onto a lightly floured surface. Gently fold it over a few times to shape it into a loose ball or oval, being careful not to deflate it too much.
2. **Let it rise again**: Place the shaped dough on a piece of parchment paper. Cover it with a towel or plastic wrap. Let it rise for about 2-4 hours at room temperature, or until it's puffed up.
3. **Preheat the oven**: An hour before baking, preheat your oven to 450°F (230°C). If you have a Dutch oven or heavy pot, place it inside while the oven preheats to get it hot.

Day 3: Baking (About 1 hour)

1. **Bake the bread**: Once the oven is preheated, carefully transfer the dough (with the parchment paper) into your hot Dutch oven or baking pot. If you don't have a Dutch oven, use a baking sheet, but you might not get the same crispy crust.
2. **Bake covered**: Cover the pot with its lid and bake for 30 minutes.
3. **Uncover and bake longer**: After 30 minutes, remove the lid and bake for another 15-20 minutes, until the bread is golden brown and sounds hollow when tapped on the bottom.
4. **Cool**: Let the bread cool completely on a wire rack before slicing.

Ask Merlin | King Arthur Baking