



# **Observing yeast under the microscope**

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**Scientific Question:**

What can we see when observing yeast under the school microscope?

**Hypothesis:**

Upon a little research, I have found out that I should be able to see an oval/egg shaped organism. According to my known information, these cells should move and therefore show a sign of life.

**Materials and equipment needed:**

1x Yeast - either "Baker's yeast" or "Sourdough yeast"  
1x School Microscope (With magnification of x4, x10 and possibly x40)  
1x (at least) Petri dish for temporary keeping of the yeast in the experiment  
2x (at least) Microscope glass slides  
Mobile phone for making images (optional)

**Steps:****1st step - Microscope preparation**

In this step, you need to prepare the microscope.

Remove the plastic cover against dust.

Next, plug in the microscope into the electrical plug.

Check if the microscope works, verify if the backlight works.

**2nd step - Sample preparation**

If your sample is in a different container (eg. glass container), separate an amount you think is enough, and place it on the Petri dish. Make sure your sample was well fed and it received necessary care from your side. After you are ensured everything is safe to start the experiment, you can put the specimen onto the glass slide/plate.

**3rd step - Microscope observations**

This step is dedicated to the observation of our specimen.

In this step you should observe our sample, under various conditions of magnification.

Take photos and create videos for proof.

**4th step - End of experiment**

After you finish your work with the microscope, remove the glass slides from the microscope and wash or wipe your specimen off. Washing is usually recommended with warm water. Put the glass slides back into the box and remove the microscope from the electrical plug. Insert the cover against dust on the microscope and return it.

## **Observations**

When I looked through the microscope at the yeast, I saw yellow spots on the yellow surface. As I focused better, I saw more confined spaces in these yellow spots.

At first it seemed to me that it didn't move at all, so I decided to look at my classmate's sample, and when I returned, I saw a little movement and the difference between the two photos. I realized why I have much less movement than those who observe baker's yeast. I actually was looking at an organic matter, which was created by a fermentation process, where flour and water actively interacted.

The slow fermentation process produces a different type of fermentation than baker's yeast. For me it was the so-called "Lactic fermentation" (these yeasts help to break down gluten and other hard-to-digest components of grain in the flour, where gluten is further broken down into amino acids. (Baker's) Yeast allows fast fermentation where it guarantees fermentation in an extra short time, so the particles in the yeast are extremely fast compared to my sourdough process, which is 12 times slower than baker's yeast.

## **Results:**

Although I didn't see a lot of moving with my specimen, I saw various results from different perspectives, eg. my classmate ones.

## **Conclusion:**

From the known facts above, we found out that some microorganisms move slower and some do faster, and therefore we should never underestimate a sample. From various internet sources, I saw that the ideal would be, when we would have a larger magnification.

## **Was my hypothesis right?**

My hypothesis was technically right, since I could see a similar result not only in my sample, but also in the sample of others. Although it was less visible in some samples and more visible in others, I think I found the correct organism, which showed signs of life.

**Photos of the investigation:**



