

# Yeastie Beasties Brief Teacher Guide

1. Story before story – Wild Grape
  - \* Wild grapes have a grey coating.
  - \* If you squash the grape, it turns into juice, and the grey stuff is in the juice.
  - \* If you cover the container, the juice foams up because of the yeast.
  - \* Yeast loves sugar, and they eat it.
  - \* This makes them burp out CO<sub>2</sub>, and pee out alcohol.
  - \* Eventually, the juice turns into wine.
  - \* Is there another way to make CO<sub>2</sub>? (Breathe out, combine baking soda & vinegar.)
2. Demo – Mento, Root Beer, and Balloon
  - \* Put a Mento in a balloon, put the balloon over the mouth of a soda bottle so the Mento drops in. Watch the balloon expand.
  - \* When balloon stops expanding, turn bottle upside-down and let the soda empty into the balloon, then turn it over again and let it drain back into the bottle.
3. Story – J&J meet StinkerBell
  - \* There was a rip in the space-time continuum. On this side there was a park where J&J were trying to catch fireflies. Jack had a pot and lid, and Jill was using a butterfly net.
  - \* There was one orange firefly moving very fast, and Jack managed to catch it in his pot. There was a bright orange light shining out around the lid.
  - \* He shook the pot, and something inside it sounded angry.
  - \* He opened the lid and the thing inside zoomed out, and it left J&J covered with dust.
  - \* The creature was StinkerBell, and the dust was pixie dust, so J&J can now fly.
  - \* They flew to the second star and fell through the rip in the space-time continuum.
  - \* They saw an island with man-eating trees, with various-sized mouths. If you wanted to be eaten by a tree, you had to choose the one with the right-size mouth for you.
  - \* Jack tried the small mouth, and it wouldn't eat him. Jill tried the big mouth, and it wouldn't eat her.
  - \* Both of them tried the medium mouth, and it ate them.
  - \* They found themselves in a room up in the branches of the tree. There were hundreds of video games in the room, and they started playing them.
  - \* Jack was playing really well, and he said, "I wish I were on the thirteenth level." And suddenly he was on that level of the game. Jill also chose another level and was suddenly there.
  - \* Jill then wished that Jack had a bunch of clown hair on his head, and it appeared.
  - \* Jack wished Jill had big teeth, and they appeared.
  - \* Jack said, "If Evil Mister Fred finds out about this , , ," And another island appeared with a castle on it. Jack said, "But there are no minions." And a hundred minions appeared.
  - \* J&J saw an Indian girl, Tiger Lily, on their island. She was sitting, chained on a rock in the bay, and she had been there for years.
  - \* EMF send minions to find out why Tiger Lily was chained to the rock.

- \* She told them she was left there to die by pirates, and if they would help her, she would do something good for them. But they just ran back to EMF, who said, “Just leave her there.”
- \* Minions complained that there was nothing to drink except water. One of them wished he had a swimming pool filled with root beer. The swimming pool appeared. Minions dove in and drank lots of root beer.
- \* When minions drink too much root beer, they become round.
- \* EMF said, “Oh, I wish they had Mentos in their stomachs.” Then the minions got really big.
- \* One of them burped and zipped around like a balloon. EMF thought this could be useful.
- \* He tied a boulder to another minion’s foot and wished there were Mentos inside it. The minion got big, burped, and was flying around with the big rock.
- \* EMF told him to go hit one of the trees. That made a hole in the tree.
- \* J&J were concerned that EMF would wreck all the trees.

#### 4. Experiment #1 – Yeast & Sugar

- Pour some yeast into a clear plastic cup and stir it with a plastic spoon. Static makes the yeast particles stick to the spoon.
- Give each 2 students a cup. Add some sugar to each. Spoon some of the yeast from the cup into each students’ cup.
- Add hot water.
- Place all the cups in a container of hot water. Leave them there until end of lesson to see if they produce CO<sub>2</sub>.

#### 5. Experiment #2 – Baking Powder and Water

- Clabber Girl was once a statue, until people sanded her down into powder. She’s now baking powder.
- Baking powder contains baking soda (a base), and also an acid (monocalcium phosphate).
- When baking powder gets wet, the sodium bicarbonate turns into CO<sub>2</sub>.
- Put baking powder into a film can that has small holes in it to let water leak in.
- Put warm water in a cylinder and drop in a film can filled with baking powder.
- Put the lid on and close the cork. The gas will make the lid rise.
- If you push on the cork, the water spurts out the sides of the cylinder. Then it continues producing CO<sub>2</sub> gas.
- Give each 2 students a tub and a cylinder and cork.
- Fill the cylinder with hot water. Give each group a can of baking powder. Have them tap it on the table first to make sure the powder will leak out.
- Students put can into water and put the inner cylinder on with the cork closed.
- Afterwards, have students empty their cylinders into their tubs.

#### 6. Demo #2 – Baking Powder & Vinegar

- For more power, repeat the experiment with a mixture of vinegar and water. Instructor does it first as a demo.
- Fill cylinder 1/3 to ½ full of vinegar, then fill with water. Add baking soda can and put on the inner cylinder with cork closed.

- When the lid rises very high, take out the cork and push down the cylinder to make the water spurt out the top.
7. Experiment #3 – Baking Powder & Vinegar
- When students do it, one person puts the can of powder into the cylinder and the other one puts the cork on.
8. Experiment #4 – Create CO<sub>2</sub> from Dry Ice
- Have students empty their containers completely into the tub. Tell them not to use their corks.
  - Fill containers with hot water.
  - Drop in some dry ice.
  - Have students put the inner cylinder back on, without the cork.
  - Instructor does the same with the larger cylinder.
9. Experiment #1 Followup
- Check cups to see if there's foam. Students can touch it if they want.
  - There was a guy in Japan who somehow got yeast in his stomach. Whenever he ate sugar, the yeast would produce alcohol and make him drunk. He kept getting pulled over for drunk driving.
  - The same thing happens to robins that eat the berries of pyrocantha bushes. It makes them drunk.
10. End of Story
- J&J went to Tiger Lily and used a rock to break her chains. They asked her what to do.
  - Tiger Lily said she had spend all that time in captivity learning how to focus her thoughts. She could focus a single thought and make sure it happens.
  - Jack asked her to turn EMF into Captain Hook.
  - Tiger Lily focused, and EMF's hand turned into a hook. The minions all turned into pirates.
  - Jack asked TL to make EMF chubby. So she filled him up with root beer, which made his belly big
  - Then they added Mentos to his stomach, and he swelled up really huge. Part of him was now in the water.
  - They heard the tick-tock of the crocodile. Then they saw it swimming toward EMF. When it bit EMF's stomach, he zoomed away like a balloon, through the space-time rip, and ended up in another dimension.