Name: _____ Date: _____

Egg Whites Turn Into Cloud Foam

Circle group

Crack an egg. The white looks like thin, clear jelly. Whip it with a whisk for a few minutes. It turns into a white foam that can stand up in peaks. Cooks use this foam to make meringue. Meringue bakes into a light, crispy treat.

The secret is the proteins in the egg white. A protein is a long chain. In a raw egg white, each chain is folded into a tight ball. When you whisk, you pull air into the egg white. You also stretch the balls open. The loose chains stick to each other. They make a thin net around every air bubble. The net holds the bubbles in place. That is why the foam keeps its shape.

Cooks follow some rules. The bowl must be very clean. Even a little grease can stop the proteins from working. A yolk has fat in it, so cooks keep yolk out. Many cooks add sugar slowly while they whip. The sugar helps the foam stay smooth.

Meringue goes into a warm oven. The heat makes the net hard. The air stays trapped inside. That is why meringue feels so light.

Questions

1. What do cooks make from whipped egg whites?

_____

_____

2. What are egg white proteins like before whisking?

_____

_____

3. What does the net do inside the foam?

_____

_____

4. Why must the bowl be very clean?

_____

_____

5. Why do cooks keep yolk out of the whites?

_____

_____

6. Why does baked meringue feel so light?

_____

_____

Words to know

whisk: a kitchen tool made of wire loops, or to beat food with it
foam: a mass of tiny bubbles packed together
meringue: a sweet, light treat made from whipped egg whites and sugar
protein: a part of food made of long chains that helps build the body
yolk: the yellow center of an egg

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Egg Whites Turn Into Cloud Foam

Triangle group

Crack an egg and the white looks like thin, clear jelly. Whip it with a whisk for a few minutes, and it changes into a bright white foam that can stand up in soft peaks. Cooks use this foam to make meringue, which bakes into a light and crispy treat.

The secret is in the egg white's proteins. A protein is a long chain of tiny parts, and in a raw egg white each chain is folded up into a tight ball. When you whisk, you pull air into the liquid and you also stretch the balls open. The loose chains then stick to each other and form a thin net around every air bubble. The net holds the bubbles in place, so the foam keeps its shape.

Cooks follow a few rules to get this right. The bowl must be very clean, because even a little fat or grease can get in the way of the proteins. That is why cooks take care not to let any yolk slip in, since a yolk holds fat. Many cooks add sugar slowly while they whip, which helps the foam stay smooth and steady.

When meringue goes into a warm oven, the heat sets the net so that it stays hard. The air bubbles stay trapped inside, and that is why a meringue feels so light.

Questions

1. What do cooks make from whipped egg whites?

_____

_____

2. What are egg white proteins like before whisking?

_____

_____

3. What does the net of proteins do inside the foam?

_____

_____

4. Why must the bowl be very clean?

_____

_____

5. Why do cooks take care not to let any yolk slip into the whites?

_____

_____

6. Why does a baked meringue feel so light?

_____

_____

Words to know

whisk: a kitchen tool made of wire loops, or to beat food with it
foam: a mass of tiny bubbles packed together
meringue: a sweet, light treat made from whipped egg whites and sugar
protein: a part of food made of long chains that helps build the body
yolk: the yellow center of an egg

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Egg Whites Turn Into Cloud Foam

Square group

Crack open an egg and the white looks like thin, clear jelly. Whisk it vigorously for several minutes, however, and it transforms into a brilliant white foam that is stiff enough to stand in soft peaks. Cooks rely on this foam to prepare meringue, which bakes into a delicate, crispy treat.

The secret lies in the egg white's proteins. A protein is a long chain of microscopic parts, and in a raw egg white each chain is folded up into a tight ball. Whisking accomplishes two things at once: it pulls air into the liquid, and it stretches those balls open. The loosened chains then bond with one another and form a thin, flexible net around every single air bubble. Because the net holds the bubbles in place, the foam keeps its shape.

Cooks follow several rules to make this succeed. The bowl must be spotless, since even a trace of fat or grease can interfere with the proteins. For the same reason, careful cooks make sure no yolk slips into the whites, because a yolk contains fat. Many cooks also add sugar gradually as they whip, which helps the foam remain smooth and steady.

When meringue goes into a gently warm oven, the heat sets the net so that it stays rigid. The air bubbles remain trapped inside, which explains why a finished meringue feels almost weightless.

Questions

1. What do cooks prepare from whipped egg whites?

_____

_____

2. What are the proteins in a raw egg white like?

_____

_____

3. What role does the net of loosened proteins play in the foam?

_____

_____

4. Why does the bowl have to be spotless?

_____

_____

5. Why do careful cooks keep any yolk out of the whites?

_____

_____

6. What explains why a finished meringue feels almost weightless?

_____

_____

Words to know

whisk: a kitchen tool made of wire loops, or to beat food with it
foam: a mass of tiny bubbles packed together
meringue: a sweet, light treat made from whipped egg whites and sugar
protein: a part of food made of long chains that helps build the body
yolk: the yellow center of an egg

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Egg Whites Turn Into Cloud Foam

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Egg Whites Turn Into Cloud Foam

Easier · 190 words · Flesch-Kincaid grade 1.8

1. Meringue, a light and crispy treat.
2. Long chains folded into tight balls.
3. It goes around each air bubble and holds it in place.
4. A little grease can stop the proteins from working.
5. A yolk has fat in it, and fat can stop the foam.
6. The heat makes the net hard, and air stays trapped inside.

Triangle: Egg Whites Turn Into Cloud Foam

This passage · 224 words · Flesch-Kincaid grade 4.8

1. Meringue, which bakes into a light and crispy treat.
2. Long chains folded up into tight balls.
3. It wraps around each air bubble and holds it in place.
4. Fat or grease can get in the way of the proteins.
5. A yolk holds fat, and fat can keep the foam from forming.
6. The heat sets the net hard, and air stays trapped inside it.

Square: Egg Whites Turn Into Cloud Foam

Harder · 228 words · Flesch-Kincaid grade 7.2

1. Meringue, which bakes into a delicate, crispy treat.
2. Long chains that are folded up into tight balls.
3. It forms around each air bubble and holds the bubbles in place.
4. Even a trace of fat or grease can interfere with the proteins.
5. A yolk contains fat, and fat can prevent the foam from forming.
6. The heat sets the net rigid while the air stays trapped inside it.