Name: _____ Date: _____

Honey Keeps for Years Because It Is Thirsty

Circle group

Honey can sit in a cupboard for a very long time. It does not spoil. A jar opened years ago can still be safe to eat. Why? It all comes down to what honey is made of.

Honey is mostly sugar. It has only a little water. Germs like bacteria and molds need water to grow. In honey, the sugar holds the water so tightly that the germs cannot get any. A germ that lands in honey dries out and stops growing.

Bees help too. They turn nectar into honey. They fan it with their wings, and extra water goes into the air. They also add something from their bodies. Then they seal the honey in wax cells.

Honey does change with age. It can get darker. It can turn cloudy and grainy. This is only sugar forming grains. A bowl of warm water makes the honey smooth again. Keep the lid on tight. Honey takes in water from damp air. If it gets too much water, it can ferment.

Questions

1. What is honey mostly made of?

_____

_____

2. What do bacteria and molds need to grow?

_____

_____

3. How do bees help turn nectar into honey?

_____

_____

4. Why does a germ that lands in honey stop growing?

_____

_____

5. What is the cloudy, grainy look of old honey?

_____

_____

6. Why should the lid stay on tight?

_____

_____

Words to know

nectar: the sweet liquid inside flowers

ferment: to change as tiny living things break down its sugar

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: _____

Honey Keeps for Years Because It Is Thirsty

Triangle group

Honey is one of the few foods that can sit in a cupboard for a very long time without spoiling. A jar opened years ago can still be safe to eat, which surprises many people. The secret is in what honey is made of.

Honey is mostly sugar, with only a small amount of water. Germs that spoil food, such as bacteria and molds, need water to grow. In honey the sugar holds on to the water so tightly that very little is left for them to use. A germ that lands in honey tends to dry out and stop growing.

Bees help, too. When they turn nectar into honey, they fan it with their wings so extra water evaporates, and they add a substance from their bodies that changes the nectar. Then they seal the finished honey inside wax cells.

Honey does change with age. It may darken, or form crystals that make it look cloudy and grainy. That is only the sugar settling into solid grains, and warming the jar gently in a bowl of warm water makes the honey smooth again. The one important rule is to keep the lid on tight. Honey soaks up water from damp air, and if it takes in too much, it can begin to ferment.

Questions

1. What is honey mostly made of?

_____

_____

2. What do bacteria and molds need in order to grow?

_____

_____

3. How do bees help the nectar become honey?

_____

_____

4. Why does a germ that lands in honey usually stop growing?

_____

_____

5. What is the cloudy, grainy look of old honey?

_____

_____

6. Why should the lid stay on tight?

_____

_____

Words to know

spoiling: going bad so that food is not safe to eat
nectar: the sweet liquid inside flowers
evaporates: turns from liquid into a gas that floats away
crystals: tiny hard grains with a regular shape
ferment: to change as tiny living things break down its sugar

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: _____

Honey Keeps for Years Because It Is Thirsty

Square group

Honey is among the very few foods that can remain in a cupboard for an extraordinarily long time without spoiling. A jar that was opened years ago may still be perfectly safe to eat, a fact that surprises a great many people. The explanation lies in the way honey is made and what it contains.

Honey is composed mostly of sugar, with only a small amount of water mixed in. The germs that ruin food, such as bacteria and molds, must have water in order to grow. In honey, the sugar clings to the water so tightly that almost none is available to them. Any germ that happens to land in honey tends to dry out and stop growing altogether.

The bees contribute to this as well. While they transform nectar into honey, they fan it vigorously with their wings so that the extra water evaporates, and they add a substance from their own bodies that chemically changes the nectar. Afterward they seal the finished honey inside cells made of wax.

Honey does change as it ages. It may grow darker, or form crystals that leave it looking cloudy and grainy. This is merely the sugar settling into solid grains, and gently warming the jar in a bowl of warm water makes the honey smooth again. The single essential rule is to keep the lid on tight, because honey absorbs water from damp air, and if it absorbs too much, it can begin to ferment.

Questions

1. What is honey composed of, mostly?

_____

_____

2. What must bacteria and molds have in order to grow?

_____

_____

3. What do bees do to nectar while they transform it into honey?

_____

_____

4. Why does a germ that lands in honey usually stop growing altogether?

_____

_____

5. What causes the cloudy, grainy look that old honey can develop?

_____

_____

6. Why is it essential to keep the lid on tight?

_____

_____

Words to know

spoiling: going bad so that food is not safe to eat
nectar: the sweet liquid inside flowers
evaporates: turns from liquid into a gas that floats away
crystals: tiny hard grains with a regular shape
ferment: to change as tiny living things break down its sugar

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: Honey Keeps for Years Because It Is Thirsty

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

Circle: Honey Keeps for Years Because It Is Thirsty

Easier · 170 words · Flesch-Kincaid grade 2.4

1. Sugar, with only a little water.
2. Water.
3. They fan it so extra water goes into the air and add something from their bodies.
4. The sugar holds the water so tightly that the germ cannot get any.
5. Sugar forming grains.
6. Honey takes in water from damp air, and too much water lets it ferment.

Triangle: Honey Keeps for Years Because It Is Thirsty

This passage · 214 words · Flesch-Kincaid grade 5.5

1. Sugar, with only a small amount of water.
2. Water.
3. They fan it with their wings so extra water evaporates and add a substance from their bodies.
4. The sugar holds the water so tightly that the germ cannot get enough.
5. Sugar settling into solid grains.
6. Honey soaks up water from damp air, and too much water lets it ferment.

Square: Honey Keeps for Years Because It Is Thirsty

Harder · 245 words · Flesch-Kincaid grade 8.2

1. Sugar, with only a small amount of water mixed in.
2. Water.
3. They fan it so extra water evaporates and add a substance from their bodies.
4. The sugar clings to the water so tightly that almost none is available to the germ.
5. The sugar settling into solid grains.
6. Honey absorbs water from damp air, and too much water can make it ferment.