Name: _____ Date: _____

# Milk Sugar and the Missing Helper

Circle group

Mia loves cheese pizza. Her cousin Omar feels sick after a big glass of milk. Their bodies handle milk in different ways. The reason is a sugar called lactose.

Milk has a natural sugar called lactose. Your body cannot use it until it is cut into small pieces. The small intestine does this with a helper called lactase. Lactase is an enzyme. An enzyme is a tool the body makes to break down food. Babies make lots of lactase, because milk is their main food.

Many people make less lactase as they grow. Then some lactose is not broken down. It goes on to the large intestine. Tiny bacteria eat it there. The bacteria make gas and extra water. That can cause a puffy belly, a rumbling stomach, and some pain. People with this problem are called lactose intolerant. It is not the same as a milk allergy. An allergy is a reaction by the immune system.

There are easy ways around it. Lactose-free milk has lactase added to it. Yogurt and hard cheese have less lactose than milk. Many people can eat them with no trouble. That may be why Mia and Omar can still share a pizza.

## Questions

**1. What is lactose?**

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**2. What does lactase do?**

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**3. Why do babies make lots of lactase?**

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**4. What happens to lactose that is not broken down?**

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_____

**5. How is lactose intolerance not the same as a milk allergy?**

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_____

**6. What are two foods that people with lactose problems may handle better?**

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_____

## Words to know

lactose: the natural sugar that is found in milk
enzyme: a tool made by the body that breaks down food
intestine: the long tube where food is digested
bacteria: very tiny living things

## 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: _____

# Milk Sugar and the Missing Helper

Triangle group

Mia loves cheese pizza, but her cousin Omar feels sick if he drinks a big glass of milk. Their bodies handle milk in different ways, and the reason is a sugar called lactose.

Milk contains lactose, a natural sugar. Your body cannot use it until it is cut into smaller pieces. The small intestine does that work with a helper called lactase. Lactase is an enzyme, which is a tool made by the body that breaks down certain foods. Babies make plenty of lactase, because milk is their main food.

As many people grow older, though, their bodies make less lactase. Then some of the lactose is not broken down. It travels on to the large intestine, where tiny bacteria feed on it. The bacteria make gas and extra water, and that can cause a bloated belly, a rumbling stomach, and some pain. People who have this problem are called lactose intolerant. It is not the same as a milk allergy, which is a reaction by the immune system.

The good news is that there are easy ways around it. Lactose-free milk has lactase added to it. Yogurt and hard cheeses have less lactose than a glass of milk, so many people can eat them with no trouble. That may be why Mia and Omar can still share a pizza.

## Questions

**1. What is lactose?**

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_____

**2. What is the job of lactase?**

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**3. Why do babies make plenty of lactase?**

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_____

**4. What happens to lactose that is not broken down?**

_____

_____

**5. How is lactose intolerance different from a milk allergy?**

_____

_____

**6. What are two foods that people with lactose problems may handle better?**

_____

_____

## Words to know

lactose: the natural sugar that is found in milk
enzyme: a tool made by the body that breaks down food
intestine: the long tube where food is digested
bacteria: very tiny living things
bloated: puffed up and full of gas

## 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: _____

# Milk Sugar and the Missing Helper

Square group

Mia adores cheese pizza, but her cousin Omar feels unwell whenever he drinks a large glass of milk. Their bodies handle milk in different ways, and the explanation lies in a natural sugar called lactose.

Milk contains lactose, and your body cannot make use of it until it has been cut into smaller pieces. The small intestine carries out that work with the help of a substance called lactase. Lactase is an enzyme, which is a tool manufactured by the body that breaks down certain foods. Babies produce plenty of lactase, because milk is their main source of food.

As many people grow older, however, their bodies produce less lactase. When that happens, some of the lactose is never broken down. It travels onward to the large intestine, where tiny bacteria feed on it. The bacteria create gas and extra water, which can lead to a bloated belly, a rumbling stomach, and occasional pain. People who experience this problem are described as lactose intolerant. It is not the same as a milk allergy, which is a reaction by the immune system.

Fortunately, there are simple ways to work around it. Lactose-free milk has lactase added to it, and yogurt and hard cheeses contain less lactose than a glass of milk does, so many people can eat them without any trouble. That may explain why Mia and Omar are still able to share a pizza.

## Questions

**1. What is lactose?**

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_____

**2. What is the job of lactase in the small intestine?**

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_____

**3. Why do babies produce plenty of lactase?**

_____

_____

**4. What happens to lactose that never gets broken down?**

_____

_____

**5. How does lactose intolerance differ from a milk allergy?**

_____

_____

**6. What are two foods that people with lactose problems may handle more easily?**

_____

_____

## Words to know

lactose: the natural sugar that is found in milk
enzyme: a tool made by the body that breaks down food
intestine: the long tube where food is digested
bacteria: very tiny living things
bloated: puffed up and full of gas

## 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: Milk Sugar and the Missing Helper

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

### Circle: Milk Sugar and the Missing Helper

Easier · 200 words · Flesch-Kincaid grade 4.1

1. A natural sugar found in milk.
2. It breaks lactose into small pieces so the body can use it.
3. Milk is their main food.
4. It goes to the large intestine, where bacteria eat it and make gas.
5. An allergy is a reaction by the immune system, but lactose intolerance is a problem digesting the sugar.
6. Lactose-free milk, yogurt, or hard cheese.

### Triangle: Milk Sugar and the Missing Helper

This passage · 221 words · Flesch-Kincaid grade 5.7

1. A natural sugar found in milk.
2. It breaks lactose into smaller pieces so the body can use it.
3. Milk is their main food.
4. It goes to the large intestine, where bacteria feed on it and make gas.
5. An allergy is a reaction by the immune system, but lactose intolerance is a problem with digesting the sugar.
6. Lactose-free milk, yogurt, or hard cheese.

### Square: Milk Sugar and the Missing Helper

Harder · 235 words · Flesch-Kincaid grade 8

1. A natural sugar found in milk.
2. It breaks lactose into smaller pieces so the body can make use of it.
3. Milk is their main source of food.
4. It travels to the large intestine, where bacteria feed on it and create gas.
5. An allergy is a reaction by the immune system, while lactose intolerance is a problem with digesting the sugar.
6. Lactose-free milk, yogurt, or hard cheese.