Transcript for *The Snowy Day* (Viking Press, an Imprint of Penguin Random House) Preview Video

Preview (0:00 – 9:56)

Hi everyone! It's Colleen from the KU Natural History Museum, and I'm so excited to remind you about tomorrow's Story Book Science, here on Facebook Live at 10am. I will be reading one of my favorite books, *The Snowy Day*, which is by Ezra Jack Keats. This book is published and being read with permission from Viking Press, which is an imprint of Penguin Random House. So thank you to them for the permission to read this book!

Now, this book is similar to the book that we read last week. Last week, you might remember, we read a book about a young girl, and she was exploring the woods. And she realized that the tracks she found were tracks she had made. Now, if you look at the cover of this book, you might notice that the young boy in the story is also making tracks! So he's walking in the snow, and he's leaving footprints. He's leaving these markings, or impressions. Alright? But, this isn't the only thing that's going to happen in the book. The young boy in this story, he's not only going to make these tracks, but he'll explore the snow. And he'll also see what happens when it gets warm. So he'll see what happens to the snow when it gets warm.

Now, I'm going to put this down because we need to talk about snow. It's a huge part of this book!

So when we talk about snow, what we're talking about is a form of precipitation. So, what that means is that the snow, it is just one form of water in clouds. And it's a special form because it's ice crystals.

So, water, or I'm sorry, snow is solid ice crystals. And it forms when it gets really, really cold. So it has to be freezing. I'm talking zero degrees Celsius, or 32 degrees Fahrenheit. It's very, very cold. And when it gets that temperature in clouds, water vapor, which is a gas, it transforms into those solid ice crystals. And then, as that happens, more water vapor transforms into those solid ice crystals, and they kind of clump together to form snowflakes, which then fall to the ground.

And if you were to look at a snowflake and really zoom in, so I'm talking about looking at it really, really, really closely, it would look something like this. There's this symmetrical pattern. So one half is the same as the other half. And it's got these six sides to it. So, this is what snow looks like when it falls to the ground. And sometimes it looks a little different because those snowflakes will clump together. Alright? So, that's snow.

Now, when I was talking about snow, I mentioned the words water vapor and ice crystals. And I briefly mentioned that water vapor is a gas, while ice crystals are solids. So when we're talking about water vapor, when we're talking about these ice crystals, we're talking about different states of matter. And we're going to talk about a few states of matter. And so we're going to put those on the wall. They're our vocabulary words. So when we talk about states of matter, we're going to talk about three states of matter. We're going to talk about solids. We're going to talk about liquids. And we're going to talk about gases.

Alright! So when we talk about these states of matter, what we're talking about is how different things act. Specifically, the things that make them up, so their atoms, how they act depending on the amount of energy. So we're going to start with solids.

This represents the atoms of a solid. So these are the things that make up a solid. And we're going to use snow as an example. So we know that snow are these ice crystals. They're solids, and we know that those ice crystals form when it's really, really cold. So I like to think of these atoms, these building blocks, the things that make up the ice crystals, I like to think of them as huddled really close together and shivering, just a little bit, because it's so cold. So these atoms, they're close together. They're moving just a little bit, but not a lot. And that represents the atoms of a solid.

Then we have liquids. So, liquids. The atoms of liquids, the things that make up liquids, they're moving a little bit more than the atoms of a solid. There's more energy. So that would look something like this. Those atoms, they're moving around. They're sloshing around a bit, kind of weaving around each other. Now, it's a little hard to think of atoms sloshing around. So, I have my water bottle. And it can be a little hard to see the water inside, but maybe you can hear the liquid water moving around, sloshing around. Alright? So, can you hear that water moving around in the container, taking the shape of that container?

I'll do it one more time.

Alright! So, the atoms of a liquid, like the water that we just listened to moving around in its container, the water bottle, there's a little more energy. So they're moving a little bit more than the atoms of a solid.

Now, we still have to talk about the atoms, or what makes up, gases. Now, this image represents the atoms, or the things that make up gases. And you can see those atoms, they are just bouncing off the walls of this container. They are moving super fast! They're going so fast that they're bouncing off the walls. There's a ton of energy when we're talking about gases. So the atoms are moving really, really fast. Alright?

So, when we talk about these states of matter: solid, liquids, and gases. We know that they're different because of how the atoms act. So in solids, there's a little bit of energy. So the atoms are really close together, moving just a little bit, but not a lot. In liquids, there's more energy. So there's more movement. And those atoms, they move around. They weave in and around each other. And we looked at liquid water to better understand this. And then for gases, those atoms, they are moving super fast! And they're bouncing off the walls because there's a lot of energy when we talk about gases. Okay? Alright!

Now, let's get back to snow. When we talk about snow, and when we talk about the snow in the book, we know that the young boy is going to discover what happens to snow when it gets warm. So what do you think happens to snow when it gets warm?

Now, I would love to have actual snow to do an experiment with you all. But it hasn't snowed recently where I live because it's just not quite cold enough. But, to replicate snow, I have a very cold ice cube. Alright? So this ice cube, this is going to represent snow in our experiment. And I've taken it out of the freezer, and I'm going to put it in a cup on the table. And what we're going to do is we're just going to leave it there. And we're going to see what happens to our replica snow when it gets warm.

Now, for this experiment, it's really important we make a prediction. So we think about what could possibly happen to this ice cube now that it's out of the freezer, and it's just outside, and it's exposed to warmth. What do you think's going to happen based on what you know about snow and what you know about the different states of matter? We know that just like snow, just like those ice crystals, this ice cube is a solid. It's frozen water. And we talked about what could happen as there is more energy. And one example of energy is heat. So, make a prediction. What do you think's going to happen to the ice cube now that it's out of the freezer, and it's exposed to warmth? What do you think's going to happen?

Alright! Well, you can join me tomorrow, where we'll read the book *The Snowy Day* by Ezra Jack Keats, and we'll look at the results of our experiment to see what happens when an ice cube, our replica snow, is exposed to warmth. So I'll see you tomorrow, here on Facebook Live at 10am. Alright? Bye!