

Scene One

Roles:

Evi= Talk show host, Laura Shovan

Georgia= Dr. S. Mells

Gracie= Dr. O. Der

Rhys= Audience Member, Fe-fe Breeze

(Talkshow Slide)

E= Hello, and welcome to Science Explained with your host, Laura Shovan! Today we will be explaining how you can smell a candle! You smell things every day, but do you really know how it happens? We will be interviewing two scientists today that will explain this phenomenon. Let's give a warm welcome to Dr. S. Mells, and Dr. O. Der!

G= Thank you so much for having us!

Gr= We are honored to be here!

E= Alright! Let's get started! First let's take questions from the audience. Yes, you over there. What is your name?

R= My name is Fe-fe Breeze. I was just wondering what phase changes were.

(Phase Changes Slide)

G= There are a total of six phase changes. When there is an increase in the temperature, melting and evaporation can happen. Evaporation, is when a liquid turns into a gas, and melting is when a solid turns into a liquid. Sublimation is another phase change. That is when a solid goes from a solid to a gas.

Gr= When there is a decrease in the temperature, freezing and condensation can occur. Freezing is when a liquid turns into a solid, and condensation is when a gas turns into a liquid. Desublimation is the last phase change that isn't that common, but is when a gas turns into a solid.

E= Wow! I never even thought about it that way before!

R= WOW!!!! That's CRAZY!!

E= Yes, you again, go ahead.

R=How do we actually smell something?

(Molecular Level of an odor Slide)

G= Well, as you can see here, an odor is a gas that travels through the air to our nose. We only smell things if it is a gas. The source of the smell turns into a gas either by evaporation or sublimation. Those gaseous odor molecules travel through the air. The odor molecules in the air are very tiny, so we can't see them. The air molecules push the other molecules around, and eventually they end up in our nose. Our noses have sensors that detect these odors.

E= So what do we need in order to smell a candle?

Gr= We need four things in order for us to smell the candles. A nose, air, movement, and something for us to smell. Also, the thing we smell must be a gas. Evaporation is when something goes from a liquid to a gas by either heat energy, or when the air molecules bump the liquid molecules into the air. When heat is applied to the liquid, the molecules move faster and have enough energy to push themselves out into the air. Sublimation is when a solid turns into a gas because of the air molecules moving faster and bumping the solid particles into the air. The solid particles now are a gas and move through the air to reach our nose. One of these two phase changes is required for us to smell and object.

E= Awesome Sauce! Well how about we pass out some FREE candles!

R= YAY!!!!!!!!!!!! FABOU!!!!!!!!!!!!

E= Everyone smell their candles!

R= Mmmmmmmmmmm

G= You can smell the candle thanks to sublimation. The solid candle is turning into a gas. A very small part of the candle is now in the gaseous state and is being pushed around by the air molecules. They are being pushed around until they reach our nose. Now, we can smell it!

E=Everyone light your candles!(light candle)

R= OMG! I can smell it even MORE now!

Gr= We can smell the candle even more when it is lit because the fire is melting the solid wax into liquid wax. Now that there is liquid wax, evaporation is also happening, so there are lots of candle molecules in the air!

G= It is easier to smell a candle when there is more heat, because both evaporation and sublimation are happening, while without heat, only sublimation is happening. The more heat, the more we can smell the object, and the less heat, the less we can smell it.

E= That's all we have for today! We would like to thank Dr. O. Der and Dr. S. Mells for coming and joining our show today! Thanks for coming, and come back tomorrow for more Science Explained!

Scene Two

(Scene Two Slide)

E:Teacher

G:Student #1

Gr:Student #2

R: Fe-fe breeze

E= Good morning,class! What did everyone do over the weekend?

Gr= I went to the movies with my friends.

G= I slept the whole weekend. By the way I didn't do my homework because I literally slept the whole time.

R= I was on a talk show called Science Explained! It was so cool! I was on T.V.! While I was there, I learned how we smell odors, and all about phase changes!

E= Why don't you tell the whole class what that is!?

R= Well, the phase changes are melting, evaporation, sublimation, freezing, condensation, and desublimation. We smell things when odor molecules are in the air from sublimation or evaporation. Also, things smell a lot more with heat!