

SCENE: BLACK PLUS BLACK MAKES BROWN FUR?

Setting: Klent, Jordan, and Alexis push through the gate into Keara's backyard.

Keara: Hey guys! How did the furry-friends sale go? Did you sell all of the rabbits to Ms. Tom, the principal at Dover Elementary?

Jordan: No, she only wanted the black ones.

Alexis: Three months ago Ms. Tom said she'd buy a rabbit for every class at Dover, but she didn't say they had to be 100% black!

Klent: We sold Midnight and Jet and six of their babies that were all black. But we had to bring back Ajax and Poseidon, the two with chocolate brown fur. What's with that? Everybody likes chocolate!

Jordan: What happened was all the kids read the book *Race Down the Rabbit Hole*.

Keara: Oh yeah, I read that when I was in elementary school. I remember the rabbit in that story was "black from the tips of his ears to the end of his tail."

Jordan: You got it. So now the kids only want all-black rabbits.

Alexis: *(sighing)* That's just great. Three months of work down the drain. We bought Jet and Midnight at the pet store; we fed them and cleaned the cages every day. We learned how to breed them. And then we took special care of Midnight and her eight kits.

Klent: I'd really like to know what's with the chocolate fur anyway. The parents were all black. Not a spot of brown! But some of their baby kits are chocolate brown! How did this happen?

Alexis: Hey, maybe it's like when the snowshoe rabbits turn white every winter to camouflage themselves against the white snow. Maybe a change in fur color is caused by the weather.

Jordan: No, I'm pretty **skeptical** about that explanation. If that were right they would all be the same color because they've all always lived in the same climate.

Klent: Maybe it's like mixing paint colors together. You take the parents' fur colors, blend them together, and—

Alexis: And you get six black kits and two brown kits? That can't be right...I think maybe the color of the fur is made by a chemical. The mother has a limited amount to make into a color. Maybe she ran out of black? So the last ones born are kind of faded out?

Klent: Wait! I know! The brown ones have got to be **MUTANTS!** They were zapped by aliens or something!

Jordan: *(rolled eyes)* More like YOU were zapped by aliens.

Alexis: *(changing the subject)* Anyway...Ms. Tom said she would buy more all-black bunnies. So if we're going to sell them, we've got to breed them. We better learn why an all-black dam and an all-black sire can have some kits that are chocolate.

Keara: Maybe that website the pet store told us about will have some info.

Jordan: Good idea. We should've read that before we first bought Jet and Midnight!

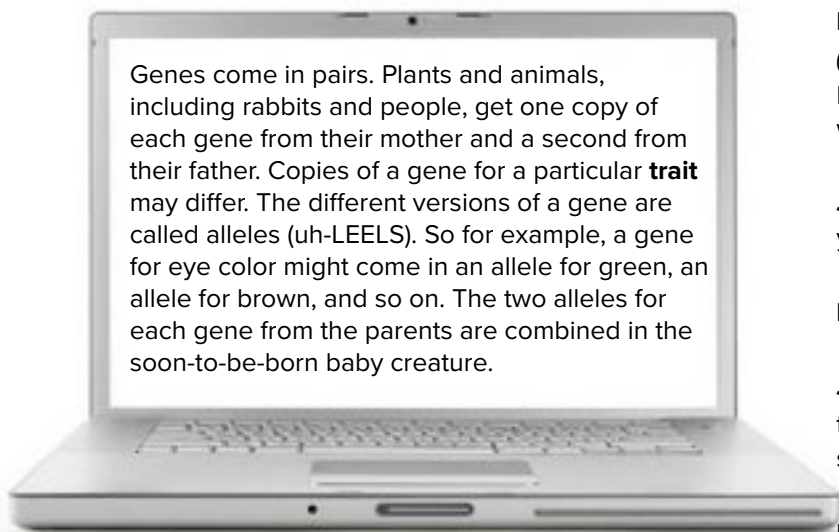
Rabbit Breeding and Genetics

A rabbit consists of many billions of tiny cells – skin cells, muscle cells, brain cells, plus cells of many other kinds – all cooperating to form the tissues and organs of the adult. Inside every rabbit cell is a set of long molecules called DNA. Every rabbit cell has the same set of DNA molecules, which it has **inherited** from the single fertilized egg cell that produced a small embryo through many cell divisions. Then, the embryo grew because of many more cell divisions and developed into the adult rabbit. Sections of each of the DNA molecules are called genes. Genes control how your rabbit turns out. The genes in the rabbit cells control **traits** such as fur color, eye color, and much more.



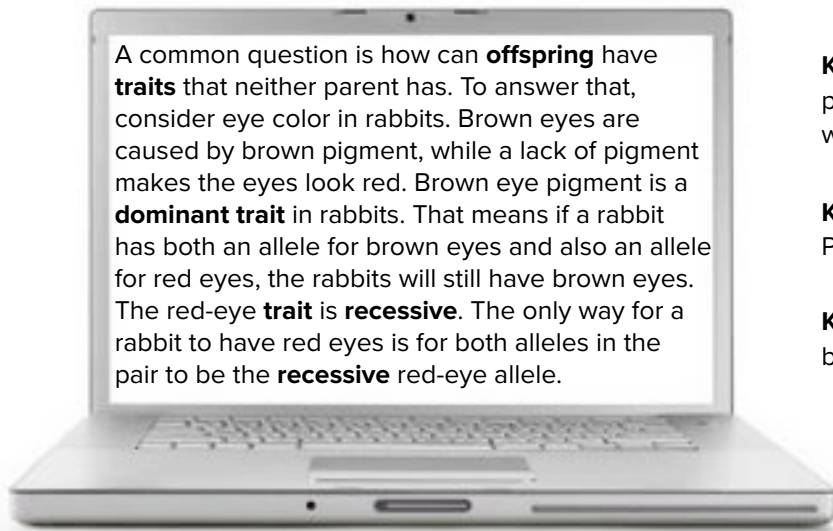
Jordan: Hey, now we're getting somewhere. Genes are formed by DNA. Because every rabbit cell has the same DNA, the same genes are present throughout the entire rabbit body! Awesome!

Keara: Keep reading, Jordan.



Keara: Wait! This is weird. Both Midnight and Jet are all black and both gave a gene for fur color to Ajax. So how come Ajax is brown?

Jordan: Chill out! Read this next part.



Klent: Recessive? Is that like a recess? The gene doesn't have to go to class?

Keara: Uh, I don't think so. It's more like it's in the background, I think.

Klent: And what does eye color have to do with fur color? *(pauses)* Wait a sec! I have blue eyes and both my parents have brown. I've always wondered how that works...

Jordan: I think it's supposed to have something to do with your grandparents.

Klent: But I never even met my grandparents.

Jordan: No, what I mean is there's a good chance one of them had blue eyes! My brother is really tall, and my Mom says my granddad was tall, but it skipped a **generation**.

Keara: I think I get it: Somebody in a previous **generation** of Klent's family had to have blue eyes for Klent to have that **trait**. Maybe fur color on rabbits works the same way.

Klent: I still don't get how a grandparent's eye color...

Alexis: Or fur color!

Klent: Fine! Eye color *or* fur color can jump over my parents and get to me from my grandparents. Seems too weird to be true.

Keara: So what are we going to do with Ajax and Poseidon? They're too cute to be rejects.

Klent: Let's go find a book about chocolate brown bunnies to read to those kids at Dover Elementary.