

## Transcript for Video Clip 4.1

Teacher/video ID:	Doggett, 4.1_stella_GEN_doggett_L5_c1
Content area:	Genetics
STeLLA strategy:	Engage students in using and applying new science ideas in a variety of ways and contexts (STL strategy 6).
Context:	In this lesson on trait inheritance, 8th-grade students consider why a recessive trait would reappear in Generation 2 offspring of dachshund parents, one short haired and one long haired, after disappearing in Generation 1 offspring. Students struggle in their conversation about how genes and alleles pass from parents to offspring.

### Video Clip 1

Time Code	Speaker	Discussion
0:00:02.6	T	OK, think about why the recessive trait would have come back. Tell the person next to you why you think the recessive trait might have come back.
0:00:09.9	E	[Inaudible]
0:00:16.6	T	What do you think?
0:00:17.5	SN	Thirteen of the—
0:00:20.9	T	But where did it come from?
0:00:21.2	SN	So it showed up on their folder.
0:00:24.6	T	Where did the little <i>m</i> come from? How do you get the recessive trait?
0:00:27.9	SN	Somewhere.
0:00:28.6	SN	So ... I don't know.
0:00:30.0	T	How do you get short-short fur?
0:00:31.9	S	Richard ... From the mom or the dad, whichever one that is?
0:00:36.2	T	OK. So it doesn't matter. What genotype would you have if you were the recessive type?
0:00:41.9	SN	Say it again.
0:00:43.2	T	If you have big <i>Ms</i> , what will you look like?
0:00:46.4	SN	Like the other one.
0:00:47.3	T	OK, so could it be big <i>M</i> , big <i>M</i> ?
0:00:49.5	S	No. So it'd be the big <i>M</i> , little <i>m</i> , so it's both.
0:00:52.8	T	If it's big <i>M</i> , little <i>m</i> , what will it look like?
0:00:55.1	S	Like that one [inaudible].
0:00:56.9	T	How do you get short fur?
0:00:59.5	S	Just little <i>m</i> , little <i>m</i> .
0:01:00.9	T	OK. How did those puppies that have short fur get little <i>m</i> , little <i>m</i> ?
0:01:04.6	SN	From the dad? [Inaudible]

0:01:08.6	T	OK. We'll come back to this.
0:01:10.5	T	All right, let's talk about this. This seems like you are still confused.
0:01:14.3	T	Shh. Joseph and Faith, make sure you're paying attention.
0:01:18.9	T	OK, we have 13 puppies here that do not have long eyebrows and mustaches. How did they get like that?
0:01:27.4	SN	'Cause they're recessive.
0:01:28.3	SN	I don't know.
0:01:29.3	T	Why are they ... why do they have short eyebrows and mustaches? What do their genetics look like? What's their genotype?
0:01:35.3	SN	Long—
0:01:36.5	SN	[Inaudible]
0:01:37.6	SN	It's, like, little <i>m</i> 's.
0:01:39.0	T	What is it?
0:01:39.6	S	Little <i>m</i> , little <i>m</i> .
0:01:40.8	T	OK, if you have short fur, you must be the genotype little <i>m</i> , little <i>m</i> , because if you have big <i>M</i> , big <i>M</i> , what do you look like?
0:01:48.7	E	[Inaudible]
0:01:49.7	T	And if you have big <i>M</i> , little <i>m</i> , what do you look like?
0:01:51.7	E	[Inaudible]
0:01:53.8	T	OK, so the only way you could be short furred would be to have little <i>m</i> , little <i>m</i> . How did those puppies get two copies of the little <i>m</i> ?
0:02:02.0	SN	Bless you.
0:02:04.1	T	Shh. How did the puppies get two copies of the little <i>m</i> ? Where did those little <i>m</i> 's come from?
0:02:11.5	SN	[Inaudible]
0:02:12.0	T	Tell the person next to you how you think these 13 puppies could've gotten two little <i>m</i> 's.
0:02:19.0	SN	They probably got it ... the traits [inaudible].
0:02:22.7	T	OK, where did the alleles come from?
0:02:24.4	S	Empowering over dominant, which is, like, impossible, 'cause the dominant is empowering.
0:02:33.1	S	In order to get little <i>m</i> , little <i>m</i> , they would both ... both parents would have to be recessive.
0:02:41.2	T	What do you think, Sarah?
0:02:42.3	S	That both parents would have to be recessive for the child to get both little <i>m</i> 's.
0:02:48.8	T	Both parents are recessive? That would mean both of the parents looked like they had short fur.
0:02:52.9	S	Yeah.

0:02:53.9	T	So ...
0:02:54.6	S	So while that ...
0:02:54.9	T	These aren't ... these are not the parents of these puppies?
0:02:57.3	S	No.
0:02:59.5	T	These are the parents of these puppies, but they're not ... they don't have short fur.
0:03:03.1	S	Well, then, because that one parent is dominant.
0:03:09.3	T	Which ... what do you mean by <i>dominant</i> ? Which parent's dominant?
0:03:12.0	S	That one.
0:03:14.0	T	So maybe we're a little confused. We have two parents that have the same genotypes here. So you have two parents here, one big <i>M</i> , little <i>m</i> , one big <i>M</i> , little <i>m</i> , and they're going to have puppies.
0:03:27.1	T	How did these puppies, these ones, get two little <i>m</i> 's?
0:03:31.6	SN	Oh.
0:03:32.3	SN	Be a little—
0:03:33.3	SN	Oh.
0:03:34.0	T	How did they get them?
0:03:36.3	S	Because the trait from the first appearance, it reappeared because they still had recessive genes in them.
0:03:45.5	T	OK, so how did they get two copies? Where did those two copies come from?
0:03:50.4	S	The parents.
0:03:51.1	T	Which ... So where did this ... where did ... where did this copy come from?
0:03:56.6	S	The parents.
0:03:56.9	T	One ... which parent?
0:03:57.7	S	I mean, you can't get it from, like, a sister.
0:03:59.3	T	Right. It does come from your parents, you're right. So I'm looking for, like, if this is Parent 1 and this is Parent 2, this little <i>m</i> came from ...
0:04:08.0	SN	[Inaudible]
0:04:09.1	T	And this little <i>m</i> came from Parent 2. OK, so because both of our parents here have little <i>m</i> 's to give, they could each [give] a little <i>m</i> to these puppies, and they would then get little <i>m</i> , little <i>m</i> .
0:04:21.5	SN	Oh, told you. I told you.
0:04:24.0	T	So ...