

How to Use the Color Chart

1. The possible colors indicated for each combination assume that each cat carries every combination of recessive color genes. You will only get all the colors indicated if this is true of your cat.

For example: if your black sire and black dam do not carry any recessives, they will only be able to produce black kittens, no matter how many colors the chart says can be produced. If they produce blue kittens, however, you can safely assume they each carry the recessive for blue. Etc., etc., and so forth.

2. Do I really need to know what a "recessive" gene is?

Yes, to have even a basic understanding of how cat colors work, you need to master a few terms. They are:

Dominant – this type of a gene needs to be inherited from only one parent to show up in the kittens. If you understand this concept, you will know why you have suddenly cornered the market on white kittens since you got that wonderful white stud.

Recessive – this is a bashful gene that works only in pairs and has to be inherited from both parents. These can be carried in secret through many generations to suddenly surprise you with unexpected colors. It gives new meaning to the term CPC (Color Point Carrier) when your 2 black parents produce a Chocolate Point Him!

Warning – progressing beyond this point may cause your eyes to cross!

Homozygous – possessing the same gene for a particular characteristic from each parent. Essential for a recessive color gene to work.

Heterozygous – possessing different forms of a gene from each parent. In this case, one form will be dominant over the other. Remember all those white kittens? You guessed it: white is dominant over non-white!

Okay, you may not be ready for a PhD. in genetics, but you are all set to use this chart.

Step One – Without regard for your cats' coat patterns, select the basic color of Sire and Dam.

For example, if the sire is a Blue Point and the dam is a Lilac Point, select "blue" from the sire row and "lilac" from the dam column. Where they intersect you can see the colors you could possibly get: blue, lilac and fawn. Fawn? Remember that this chart is set up to accommodate all breeds. You can eliminate any colors that don't exist in your breed...unless you are an Oriental or Devon Rex breeder in which case there aren't any that don't exist.

Step Two – Now that you know what color your kittens might be, you may be interested in what coat patterns they might have. Consult the appropriate pattern chart.

For example, if both parents are pointed cats, by checking the pointed pattern information you can see that the pointed (Siamese) pattern is recessive and all kittens will be pointed. Because you know about recessive genes, you can also see that if one parent is not pointed (a solid blue male) all the kittens should be solid in pattern. Don't get too confident though. He could be a CPC, in which case 50% of the kittens would still be pointed. Don't panic, the pattern chart covers all those possibilities.

Step Three – (only the strong of heart will want to go here) – If you are dealing with more than one pattern, determine the colors first, deal with each pattern separately by the chart and then combine all possibilities.

For example, you are breeding a Silver Tabby ASH male to a Blue/White ASH female. Use "black" for the Silver Tabby and "blue" for the Blue/White. The chart says Black, Blue, Chocolate, Lilac, Cinnamon and Fawn can be produced; however the last 4 colors are not present in the ASH gene pool (we hope!) so the only real color possibilities are **Black** and **Blue**.

If the Tabby is heterozygous, only 50% of the offspring will be tabbies;

the rest could be Blacks or Blues. The 50% Tabbies could be **Brown Tabbies** or **Blue Tabbies**. In case you are lost at this point, a silver tabby is a brown tabby whose tan background has been changed to silver.

According to the Silver chart, the male will produce 50% silver offspring if he is heterozygous, so you have a possibility of both **Silver Tabbies** and **Blue Silver Tabbies**. The solids would be **Black Smoke** and **Blue Smoke**.

If the Blue/White female is heterozygous for White Spotting, she will produce 50% white spotted (i.e. bicolor) offspring. That means you could have **Black/White**, **Blue/White**, **Brown Tabby/White**, **Blue Tabby/White**, **Silver Tabby/White** and **Blue Silver Tabby/White** kittens. And don't forget the **Black Smoke/White** and the **Blue Smoke/White** ones.

Isn't this fun? Now if you are a real glutton for punishment, try making that a Red/White female and see what you could get!

Step Four – Why isn't white on the list of colors? See the White Pattern chart. It answers all.

Hints for specific breeds:

Abyssinian: substitute Ruddy for Black and Red for Cinnamon (sorry, it's really not a red cat).

Burmese: substitute Sable for Black, Champagne for Chocolate and Platinum for Lilac

Havana Brown: substitute Brown for Chocolate

Siamese and all Siamese patterned cats: substitute Seal for Black.

Oriental: substitute Ebony for Black

Tonkinese: substitute Natural for Black, Champagne for Chocolate and Platinum for Lilac.

Pointed to Pointed = 100% pointed

Pointed to Mink = 50% pointed, 50% mink

Pointed to Solid = 100% mink

Mink to Mink = 50% mink, 25% point, 25% solid

Mink to Solid = 50% mink, 50% solid

Solid to Solid = 100% solid

Note: All stated percentages reflect statistical probabilities over a large number of kittens only. Your mileage may vary.

POINTED (SIAMESE) PATTERN

The colors in this pattern are restricted to the cat's extremities (face, ears, legs, tail). This gene is recessive and can be carried by non-pointed cats. Predicted ratio of pointed kittens:

Pointed to pointed = 100% pointed

Pointed to solid = 100% non-pointed CPCs

Pointed to solid CPC = 50% pointed, 50% solid CPCs

Pointed to homozygous tabby = 100% non-pointed tabby CPCs

Pointed to homozygous tabby CPC = 50% tabby CPCs, 50% lynx points

Pointed to heterozygous tabby = 50% tabby CPCs, 50% solid CPCs

Pointed to heterozygous tabby CPC = 25% pointed, 25% lynx

pointed, 25% tabby CPCs, 25% solid CPCs

Pointed to white = see White chart

Pointed to bi-color = see White Spotting chart

TABBY PATTERN

Any color can be produced as a Tabby if the dominant agouti gene is inherited from either or both parents. Two non-Tabbies cannot produce a Tabby, however a tabby pattern can often be seen in red or cream cats that are not Tabbies. Particolor cats will appear as patches of 2 different Tabby colors. Note: substitute BROWN TABBY for black in the color chart. If the cat also carries the Silver Inhibitor gene, substitute SILVER TABBY for black and CAMEO TABBY for red.

Homozygous tabby to homozygous or heterozygous tabby = 100% tabbies

Heterozygous tabby to heterozygous tabby = 75% tabbies, 25% solids

Homozygous tabby to solid = 100% tabbies

Heterozygous tabby to solid = 50% tabbies, 50% solids

SILVER PATTERN

The Silver Inhibitor gene prevents production of color on the part of the hair shaft closest to the skin. In solid color cats the Silver may be at the roots only (Smoke). In Tabbies it will silver the background part of the pattern. In some cats, the tabby and inhibitor genes will combine to remove a large part of color from the hair shaft creating a mantle of color (Shaded), or leaving only the tips colored (Chinchilla). Since this is a dominant gene, two non-silver cats cannot produce a silver; there must be at least one silvered parent. Example: 2 silver tabbies can produce a brown tabby; 2 brown tabbies cannot produce a silver tabby.

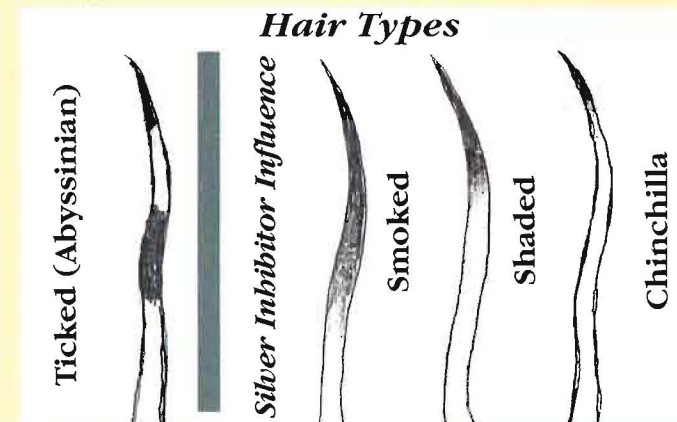
Homozygous Silver to homozygous Silver = 100% Silver

Homozygous Silver to heterozygous Silver = 100% Silver

Heterozygous Silver to heterozygous Silver = 75% Silver, 25% non-silver

Homozygous Silver to non-Silver = 100% Silver

Heterozygous Silver to non-Silver = 50% Silver, 50% non-Silver



WHITE PATTERN

White is not a color but the absence of color. There are 2 patterns: Dominant White which prevents the expression of color over the entire cat and White Spotting which prevents parts of the cat from being the color they are supposed to be.

DOMINANT WHITE

Homozygous Dominant White to Homozygous Dominant White = 100% White

Homozygous Dominant White to heterozygous Dominant White = 100% White

Heterozygous Dominant White to heterozygous Dominant White = 75% White, 25% colored

Homozygous White to colored = 100% White

Heterozygous White to colored = 50% White, 50% colored

WHITE SPOTTING is variably expressed and can be anything from a white locket to a Van. White Spotting can be present on a Dominant White cat, but, of course, could not be seen except on colored offspring. Two colored cats without white cannot produce a bicolor (white spotted) offspring.

Homozygous White Spotted to Homozygous White Spotted = 100% bicolor cats (often Vans)

Homozygous White Spotted to heterozygous White Spotted = 100% bicolor cats

Heterozygous White Spotted to heterozygous White Spotted = 75% bicolor, 25% colored

Homozygous White Spotted to colored = 100% bicolor cats

Heterozygous White Spotted to colored = 50% bicolor cats, 50% colored

FELINE COLOR BREEDING

41 DUMMYS

presented by
CFA Southwest Region



In Collaboration:

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FELINE COLOR BREEDING CHART

<div>Dam</div> <div>Sire</div>	BLACK	BLUE	CHOCOLATE	LILAC LAVENDAR	CINNAMON	FAWN	RED (ORANGE)	CREAM	TORTIESHELL (Black/Orange)	BLUE CREAM	CHOCOLATE TORTIE	LILAC CREAM	CINNAMON TORTIE	FAWN CREAM
BLACK														
BLUE														
CHOCOLATE														
LILAC LAVENDAR														
CINNAMON														
FAWN														
RED (ORANGE)														
CREAM														

The Tabby Patterns



Classic Tabby

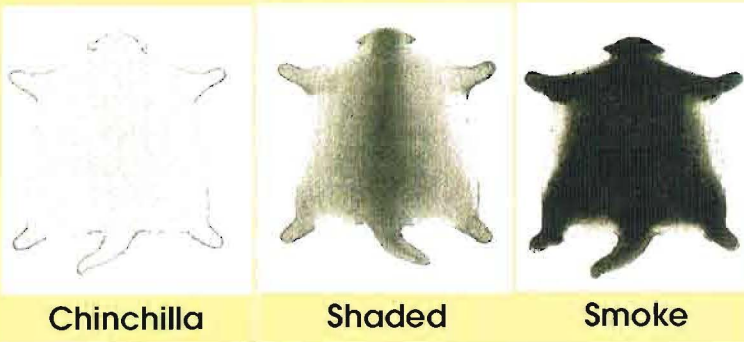
Mackerel Tabby

Spotted Tabby

Ticked Tabby

Patched Tabby

The Shaded & Tipped Patterns

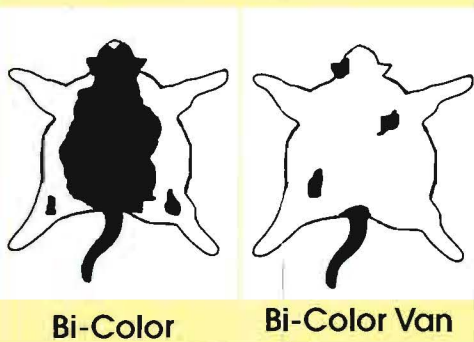


Chinchilla

Shaded

Smoke

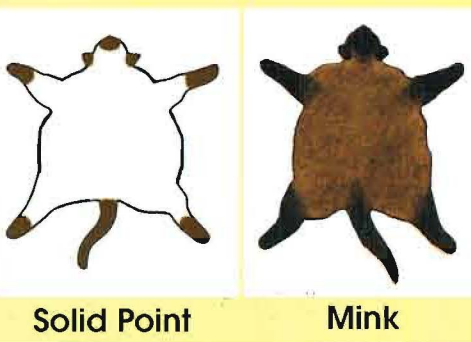
The Bi-Colors



Bi-Color

Bi-Color Van

The Pointeds



Solid Point

Mink