Base Pass Down Rate

All **base pigment (E/C/R)** pass down the same.
Homozygous (EE, CC, or RR) = 100% pass down of one gene
Heterozygous (Ee, Cc, or Rr) = 50% chance pass down of one gene
Homozygous recessive - ee, cc, rr will all remain the same unless a dom gene is present.

Here are some breeding examples to look at when you breed two Sindows together:

EE x EE = 100% EE
EE x Ee = 50% EE or 50% Ee
EE x ee = 100% Ee
Ee x Ee = 50% Ee, 25% EE, 25% ee
Ee x ee = 50% Ee, 50% ee
ee x ee = 100% ee

Dilution D/d passs down the same as well.
DD = 100% pass down of one gene
Dd = 50% chance pass down of one gene
As dd means dilution is active, you want to breed a Dd to a Dd Sindow to potentially get a dilution Sindow. Or of course dd x dd or Dd x dd.

Here are some examples when breeding for dilution:

DD x DD = 100% DD
DD x Dd = 50% DD, 50% Dd
DD x dd = 100% Dd
Dd x Dd = 50% Dd, 25% DD, 25% dd
Dd x dd = 50% Dd, 50% dd
dd x dd = 100% dd

When **Inactive Saturation** is present S/s it will pass down like the base pigment and dilution.

SS = 100% pass down of one gene

Ss = 50% chance pass down of one gene.

When **Active Saturation** is present it will pass down differently:

Here are the pass down rates for Saturation:

inactive saturation x active saturation

(this example uses scarlet, but it's true for all Saturations)

ss x S^sS^s = 100% Ss, the saturation is taken out and all offspring are Saturation carriers (Ss).

ss x S^ss = 50% Saturation carrier (Ss), 50% no saturation (ss).

Ss x S^sS^s = 50% Saturation (S^ss) 50% Saturation carrier (Ss)

Ss x S^ss = 25% Saturation, 50% Saturation Carrier, and 25% no saturation

SS x S^sS^s = 100% Saturation

SS x S^ss = 50% Saturation, 50% Saturation carrier

Active Saturation x Active Saturation

Scarlet x Orange = 50% Scarlet, 25% Orange, 25% Yellow

Scarlet x Yellow = 50% Orange, 25% Scarlet, 25% Yellow

Scarlet x Green = 60% Scarlet, 40% Green

Scarlet x Sapphire = 50% Purple, 25% Scarlet, 25% Sapphire

Scarlet x Purple = 50% Scarlet, 25% Purple, 25% Sapphire

Orange x Yellow = 50% Yellow, 25% Orange, 25% Scarlet

Orange x Green = 50% Yellow, 25% Scarlet, 25% Sapphire

Orange x Sapphire = 60% Orange, 40% Sapphire

Orange x Purple = 50% Scarlet, 25% Sapphire, 25% Yellow

Yellow x Green = 50% Yellow, 25% Green, 25% Sapphire

Yellow x Sapphire = 50% green, 25% yellow, 25% Sapphire

Yellow x Purple = 60% Yellow, 40% Purple

Green x Sapphire = 50% Sapphire, 25% Green, 25% Yellow

Green x Purple = 50% Sapphire, 25% Scarlet, 25% Yellow

Purple x Sapphire = 50% Sapphire, 25% Purple, 25% Scarlet

Saturation x Same Saturation = 100% that saturation
- So, the only sure way to get a chance of lets say purple is to breed a purple x purple -

So if you breed a sapphire Sindow and a scarlet Sindow together, all red offspring will be scarlet and all black offspring will be sapphire. However, blender colors can produce 'mixed' offspring if the bases are right.

Scarlet x Yellow = 50% Orange, 25% Scarlet, 25% Yellow
Scarlet x Sapphire = 50% Purple, 25% Scarlet, 25% Sapphire
Yellow x Sapphire = 50% green, 25% yellow, 25% Sapphire

So, if you're breeding a Scarlet and a Yellow Sindow together, all red base offspring have a 50% chance at being orange, 25% chance at being scarlet, and a 25% chance at being yellow.

Scarlet x Sapphire will only result in purple offspring if any of the offspring are chocolate, which can be bred from a black base x red base breeding.

For example:
Ee/cc/rr/Dd/S^aS^a x ee/Cc/Rr/Dd/S^sS^s

There is a 50% chance of getting Rr and a 50% chance of getting rr, so if the offspring gets rr, as well as Cc, then the offspring will be chocolate and instead of Sapphire or Scarlet, the offspring will be purple. The same thing can happen between a Yellow x Sapphire breeding.