

# **Color Theory, Mixing Toners, and Tinting (REF09)**

## **Objectives Worksheet**



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# ***Module 1 - Perception Of Color***

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**Color And Light****How Light Affects Color**

When light is applied to an object, the \_\_\_\_\_ wavelengths are perceived as color.

**Natural Sunlight**

\_\_\_\_\_ gives the truest and most balanced color perception and contains the entire visible spectrum of light.

**Metamerism**

\_\_\_\_\_ is the affect of a paint appearing to be different colors under different light sources.

\_\_\_\_\_ light has more yellows, oranges, and reds compared to sunlight.

**Color Vision Deficiency Causes**

Color vision problems caused by outside influences, such as wearing colored contact lenses, nicotine, alcohol, caffeine, prescription drugs, carbon monoxide, general health, or \_\_\_\_\_ , may only be temporary.

**Metallics And Pearls****Metallic Flakes**

Metallic flakes are typically made from finely ground \_\_\_\_\_ .

**Metallic Effect**

As a metallic finish is sprayed wetter or heavier, the flakes will typically settle deeper in the finish causing it to look \_\_\_\_\_ .

**Pearl Effect**

Pearl flakes are made from \_\_\_\_\_ and will shift color and sparkle when viewed from different angles.

### **Tri-Coat Finish**

A tri-coat finish is made up of a \_\_\_\_\_ , a midcoat, and a clearcoat.

# ***Module 2 - Color Evaluation***

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**Vehicle Color****Vehicle Color**

When refinishing a vehicle, the \_\_\_\_\_ color is the color objective.

Some ways of determining if a vehicle has been previously \_\_\_\_\_ include looking for signs of masking, looking for overspray on jambs, and measuring film thickness.

**Color Comparison Light Sources**

Natural \_\_\_\_\_ is the best light source for evaluating a color match.

Color corrective artificial light sources used for color evaluations should have a minimum color-rendering index (CRI) of \_\_\_\_\_.

**Gloss**

When evaluating the refinish color to the vehicle, ensure that the vehicle finish is \_\_\_\_\_ and shows the true level of gloss.

**How To Evaluate Matte Finishes**

Wet sanding and buffing a portion of a \_\_\_\_\_ matte clearcoat will aid in evaluating the basecoat color.

**Evaluating****Munsell Color Theory**

When evaluating a color using the Munsell color theory, first establish the value, then the \_\_\_\_\_, and then the chroma.

**Value**

\_\_\_\_\_ is the degree of lightness or darkness of a color.

**Hue - Main Colors**

The four \_\_\_\_\_ hues on a Munsell color chart are blue, red, yellow, and green.

**Hue Movement - Main Colors**

As \_\_\_\_\_ travels around the color wheel, it indicates a movement or change in color.

Colors that are straight across from each other on the color wheel will “kill” each other, for example, adding \_\_\_\_\_ will eliminate or reduce the red look of a color.

**Chroma**

\_\_\_\_\_, or color intensity, increases as a color moves outward from the center on the color wheel.

**Flop**

\_\_\_\_\_ causes a metallic or pearl to look different when viewed from different angles and may be also called flip or side tone.

***Color Matching Tools*****Using A Color Variance Deck**

Color variance chip decks are used to help select the proper \_\_\_\_\_ when there are variants from the prime or standard color.

**Color Maps**

A color \_\_\_\_\_ can be used to help obtain a mixing formula for a color that has no color code available.

***Making Sprayout Panels For Color Evaluation*****Colored Undercoats**

\_\_\_\_\_ undercoats can be used to help improve hiding and color match of translucent basecoats.

**Making Sprayout Panels**

\_\_\_\_\_ panels should be made using the same spray gun set-up, distance, travel speed, and position that will be used when refinishing the vehicle.

**Color Effect Panel**

A color effect panel can be used to determine the number of coats of \_\_\_\_\_ required to match a finish that has a high content of pearl.

***Sprayout Panels For Tri-Coat Finishes*****Let-Down Panel**

A let-down panel is used to help determine the correct number of \_\_\_\_\_ when evaluating color match for a tri-coat finish.

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# *Module 3 - Tinting Refinish Colors*

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**When To Tint****When To Tint**

\_\_\_\_\_ is done as a last resort to achieve a blendable match.

**Tinting Guides**

A tinting guide lists the characteristics of the various \_\_\_\_\_ used in a mixing system.

**Color Wheel Location Guides**

Toner location on the color wheel will identify the color family, the color or hue direction, and how \_\_\_\_\_ the toner is.

**Tinting Recommendations**

When tinting a color, use a portion of the mixed color and record how much toner is being used and how the color moves. It is recommended to use toners inside the \_\_\_\_\_ and add them in small amounts one at a time.

**Color Plotting****Toner Strengths**

The dominant toner is the toner that has the highest \_\_\_\_\_ in the formula for the refinish color.

When tinting a color with toners that are in the formula, the biggest change in \_\_\_\_\_ will be made by adding the small-quantity toner the farthest from the dominant toner on the color wheel.

**Changing Flop**

Methods for \_\_\_\_\_ the flop of a metallic color include using a faster reducer, increasing spray gun distance, and tinting with the metallic or white toner that is in the formula.

