SkillsUSA, is providing this Color Tinting Study Guide to assist Automotive Refinish Technology contestants an opportunity to get familiar with the theory and tools that they will be using during the contest. Please use this study guide to your advantage, those who have a good understanding of the content within this presentation will do well during the contest.

During this competition, Safety glasses are required at all times. Not wearing your safety glasses will cost you five points. You will be allowed 1.5 hours to complete five exercises, two solid colors, two metallic colors, and one basecoat/clearcoat pearl color (not three stage). Don’t rush through the exercises, you have plenty of time to complete the entire Color Tinting Competition.

Good Luck!
When the colors of the spectrum are put into a circle the “Color Wheel” is formed.

The Color Wheel has three “Primary” colors.

Primary colors cannot be made by combining other colors.
The Color wheel also has three “Secondary” colors. Secondary colors are made by combining primary colors. Center or Neutral colors are also possibilities.
In addition to solid colors, there are also metallic and pearl colors. However, the descriptions are the same. Examples of color groups are listed:

Obvious red colors are described as: RED
Obvious orange colors are described as: Orange
Obvious yellow colors are described as: Yellow
Gold metallic colors are described as: Yellow
Obvious green colors are described as: Green
Obvious blue colors are described as: Blue
Obvious Violet colors are described as: Violet

The other color is group known as Center or Neutral colors. Solid colors such as white, black, or gray are center/neutral colors. Metallic colors such as silver or gray are center/neutral colors.
Center/Neutral colors get their name from the location of black, white, and gray in the center of Munsell color wheel.
Color adjustment plan

Describe the differences of the sprayout and the car color.

Look for possible mixing color solutions.

Choose the most probable correction.

Record the process.
There are seven color groups.

Red, Orange, Yellow, Green, Blue, Violet, and Center/Neutral. Colors are positioned by placing them in a color group. White Gray and Black are center/neutral colors. Color direction or Hue is determined by the closest neighbor. Center/Neutral colors can have any color direction/hue.
How to describe/analyze the color difference

What is the color GROUP/COLOR? Blue

What is the color DIRECTION/HUE? Bluer, Slightly Violet

What is the color PURITY/CHROMA?
Example: The car is?

Red colors can be . . .

- Redder
- Redder, Slightly Bluer
- Redder, Slightly Yellower

To the Extreme
- Bluer
- Yellower

Also, is the car . . .
- Cleaner
- Slightly dirty or
- Dirty
Example: The car is?

Yellow colors can be . . .

- Yellower
- Yellower, Slightly Redder
- Yellower, Slightly Greener

To the extreme
- Redder
- Greener

Also, is the car . . .
- Cleaner
- Slightly dirty or
- Dirty
Example: The car is?

- Greener
- Greener, Slightly Yellower
- Greener, Slightly Bluer

To the extreme
- Yellower
- Bluer

Green colors can be...

Also, is the car . . .
- Cleaner
- Slightly dirty or
- Dirty
Blue colors can be . . .

- Bluer
- Bluer, Slightly Greener
- Bluer, Slightly Redder

To the extreme
- Greener
- Redder

Also, is the car . . .
- Cleaner
- Slightly dirty or
- Dirty

Example: The car is?
Example: The car is?

Center colors can be . . .

• Shades of Gray
• Shades of Brown
• Shades of Silver
• Shades of Gold

Plot these colors in a color group to better describe the color direction.

In any color group.
Face Tone

What we see when looking at a panel from a 90° angle.

Describe
- Color Group
- Color Direction
- Color Purity
The Mixing Color Symbol

Color Group

Color Direction

Purity / Chroma

Clean

Slightly Dirty

Dirty
How to read the toner (tinting swatch) characteristics?

- Red Color Group
- Slightly Blue Color Direction
- Clean Purity

- Red Color Group
- Slightly Yellow Color Direction
- Dirty Purity
Flip Tone

What we see when looking at a panel from the greatest angle.

Describe

• Brightness Flip
• Color Flip
How to read the toner (tinting swatch) characteristics?

- Yellow Color Group
- Slightly Green Color Direction
- Clean Purity
- Light Brightness Flip
- Green Color Flip

- Blue Color Group
- Slightly Green Color Direction
- Clean Purity
- Slightly Dark Brightness Flip
- Red Color Flip
The Brightness Flip Symbol

- Light Brightness Flip
- Slightly Dark Brightness Flip
- Dark Brightness Flip
The Color Flip Symbol

Block color indicates color flip group.

- No Color Change
- Slight Color Change
- Strong Color Change
Below is an example of brightness flip and color flip.

- When the rear door is opened, the brightness of the paint appears darker. This is described as brightness flip.
- When open, the rear door also looks bluer, this is described as color flip.
- These effects must be considered with metallic colors.
In this case, the difference is only in the metallic effect, there is no true color difference.

Example: Compared to the rest of the car, The door is?
Example: The car is?

Center colors can be . . .
- Shades of Gray
- Shades of Brown
- Shades of Silver
- Shades of Gold

- Redder
- More Orange
- Yellower
- Greener
- Bluer
- More Violet

Also, is the car . . .
- Cleaner
- Slightly dirty or
- Dirty
Solid Color - Exercise # Sample

1) Color / Color Group: Red

<table>
<thead>
<tr>
<th>Face</th>
<th>Flip / Flop (Metallic Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighter</td>
<td>Red</td>
</tr>
</tbody>
</table>

7) Selected Toner: Q231

The car is what when compared to the spray out?

<table>
<thead>
<tr>
<th>Color / Color Group:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of Color [Red (R), Yellow (Y), Blue (B), Green (G) and Neutral (N) = White, Black, Gray and Silver]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Value = Lightness/Darkness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of difference in Lightness or brightness [Lighter (L), Darker (D) or Equal (E)]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hue = Color Direction:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of difference in color hue [Blue (B) or Violet (V) or Red (R) or Orange (O) or Yellow (Y) or Green (G) or Equal / Even (E)]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chroma = Purity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of difference in Cleaner or Dirtier color (Muddier). [Clean (+), Dirtier (-) or Equal / Even (E)]</td>
</tr>
</tbody>
</table>