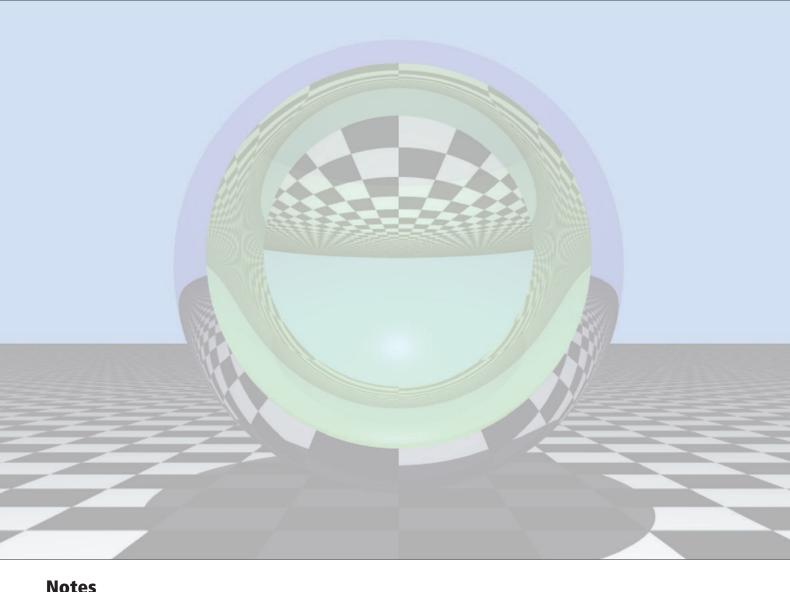


Reflecting colour

Resene the paint the professionals use

Notes		



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Reflecting colour

Tiny particles of colour called pigments are what gives plants, animals, humans and minerals their colouring. They are also used to colour paints and dyes made by humans. Pigments absorb colours but reflect their own colour.

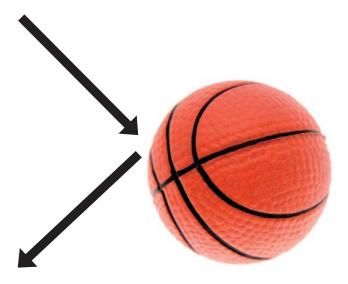
Everywhere colour - Reflecting colour

Resene

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Reflection is like a ball hitting a wall and bouncing off. The ball cannot be absorbed into the wall, so once it hits the wall it will bounce off at an angle depending on the angle it hit the wall.

Reflection of light works the same way. When light hits a surface some colour may be absorbed and the colour that is not absorbed will be bounced back off the surface for us to see.

Resene
the paint the professionals use

Everywhere colour - Reflecting colour 3

Notes

Light from the sun is made up of both visible light that we see but also heat, which is why you can get sunburnt if you stay outside during summer.

If something is black, this generally means it absorbs all light and heat. This will make the surface very hot. If you have ever worn a black t-shirt on a sunny day you will know how hot black can get.

If you wore white clothing instead, the light and heat would be reflected, which would keep you much cooler. This is why most summer sports uniforms are light coloured rather than dark coloured clothing.

Many countries have very hot weather over summer. People will often wear light coloured loose fitting clothing to keep themselves cool.



Everywhere colour - Reflecting colour

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Too much heat can cause damage. For humans too much direct heat from the sun can cause sunburn.

If wood is painted in black, the large amount of heat absorbed can make the timber warp or bend out of shape.

Black plastic toys left in the direct sunshine can soften or melt as they absorb too much heat. White objects are more resistant to the heat of the sun as they will reflect more of the heat, however they can still be damaged if they are not designed to be left in direct sunshine.



Everywhere colour - Reflecting colour

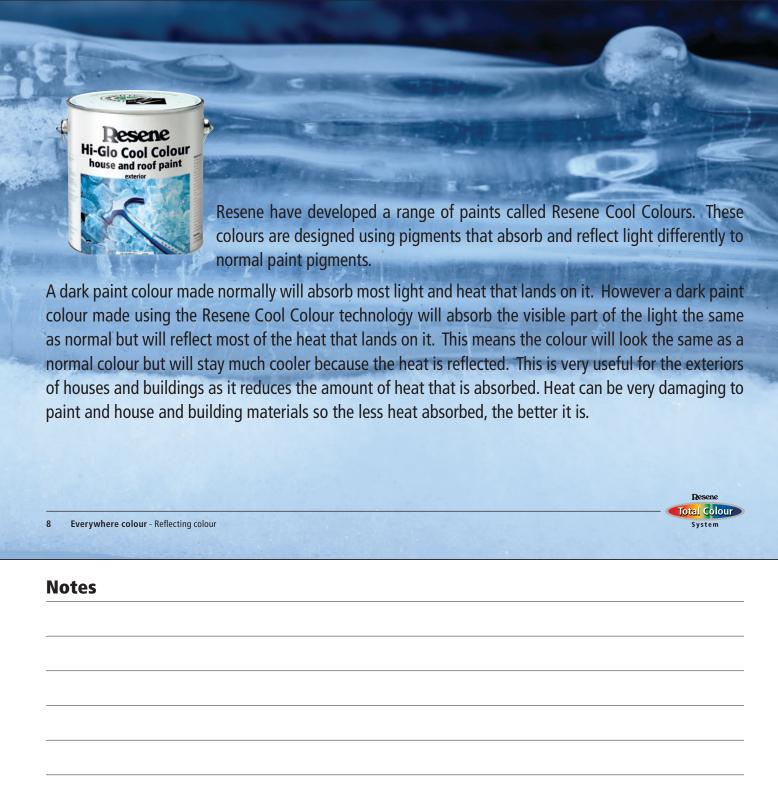
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Even different hair colours will absorb the heat differently. Black or dark brown hair will absorb much more heat than blonde hair. Find a friend or family member with very differently coloured hair and sit outside in the direct sunshine for five minutes. Make sure you put on some sunscreen before you go outside. Then go inside and place your hand on your own hair and then the other person's hair. The darker hair should feel warmer.

You can also try this using paint. Paint one piece of cardboard with black paint and one piece with white paint. Leave the cards in the direct sunshine for 10 minutes. Check them after 10 minutes and record which feels the hottest when you touch it. Put the cards back into the direct sunshine for another 30 minutes and test again which feels the hottest. Keep a record of your results.

Try this!

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If an object is multi-coloured (made up of more than one colour), this means that different areas of the object absorb and reflect different colours.

If you put two red objects side by side, the colour of each will normally look a little different. This is because there are so many different variations for each colour. A red that has a hint of blue in it is reflecting red light and a little blue light. A red that has a hint of green in it is reflecting red light, absorbing blue light and reflecting a little green light. It is these differences in the light that is being reflected that makes the colour look different.



Everywhere colour - Reflecting colour 9

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The same colour can look very different depending on whether it is inside or outside and whether you have the lights turned on inside. This is because artificial (man-made) lighting is different to sunlight.

When you are choosing colours for interior rooms and furnishings it is important that you look at them under the artificial lighting that will be in the room. If you look at them under different lighting they may look very different when you get them home.

This is why Resene encourages people buying paint to try out their colours using testpots. When choosing paint, testpots are the best way to check that the colours being chosen look right in the area being painted.



Everywhere colour - Reflecting colour

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testpot

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Colours can also look different depending on how they are made. Years ago all paint colour charts were made using printer's ink. This printer ink was coloured to match the colour standards of the paint company. Specialised colour staff would check each colour match and adjust them so they matched the company colour standards. All colours were matched under natural daylight. However, some customers would view colours inside and they would look very different. This is called metamerism and means that two colours may look the same in one light but can look different when compared to each other under other lights.

For example, two colours may look identical outside but one may look greener when compared inside with the lights on. Some colours are more prone to this effect than others. When colours were colour matched under natural daylight the printer ink would sometimes be a perfect match under natural daylight but look quite different under other lighting.

Resene now uses its own paint for most of its colour paint chips and samples. The paint is much more accurate than the printer ink under different lighting as it acts like the paint in the can does. This means that customers can get a truer idea of the colour from the colour chart.

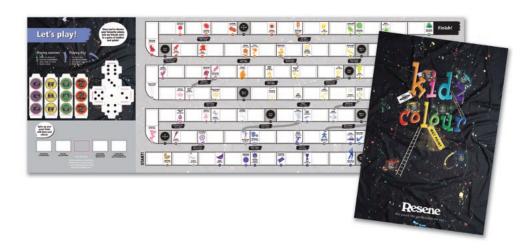


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Notes

Everywhere colour - Reflecting colour

Colours can be measured to see how much light they reflect. This is called their reflective or reflectance value and tells us how much of the visible light (the light we can see) that the surface is reflecting. The darker the colour the less light is reflected. A colour that is close to white will reflect nearly 100% of the visible light. A colour close to black will reflect almost none of the visible light. This is because dark colours absorb most light. If you look at Resene paint colour charts you can see the reflectance values for different colours.

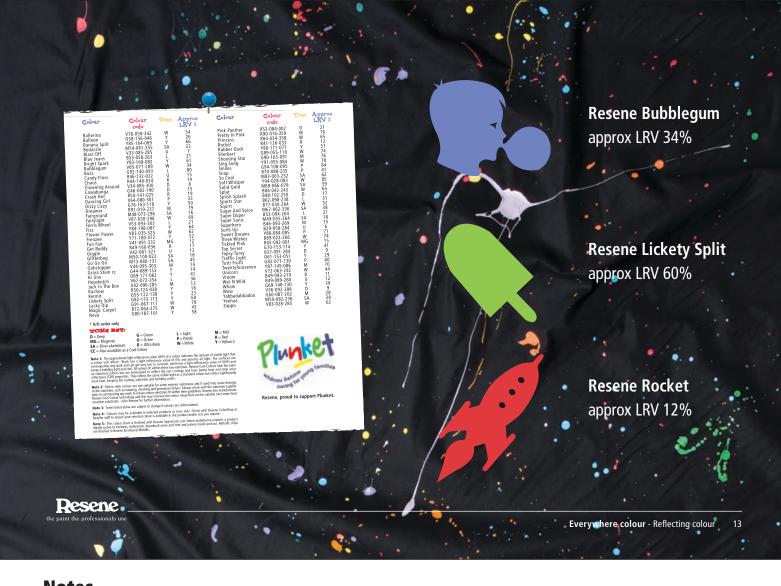




Everywhere colour - Reflecting colour

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Learn more about colour with the Resene Everywhere colour series. Modules include:

Changing colour Colour wheels Colour and nature Colour in art Colour of light Decorating colour Dissolving colour **Dotted colour** Everywhere colour Eyes and rainbows Filtering colour Illusion and tricks with colour Making colour - Dye Mixing colour Reflecting colour Safety colour Seeing colour - Animals Seeing colour - Humans

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Colours printed as close as printing process allows.

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