



Illusion and tricks with colour

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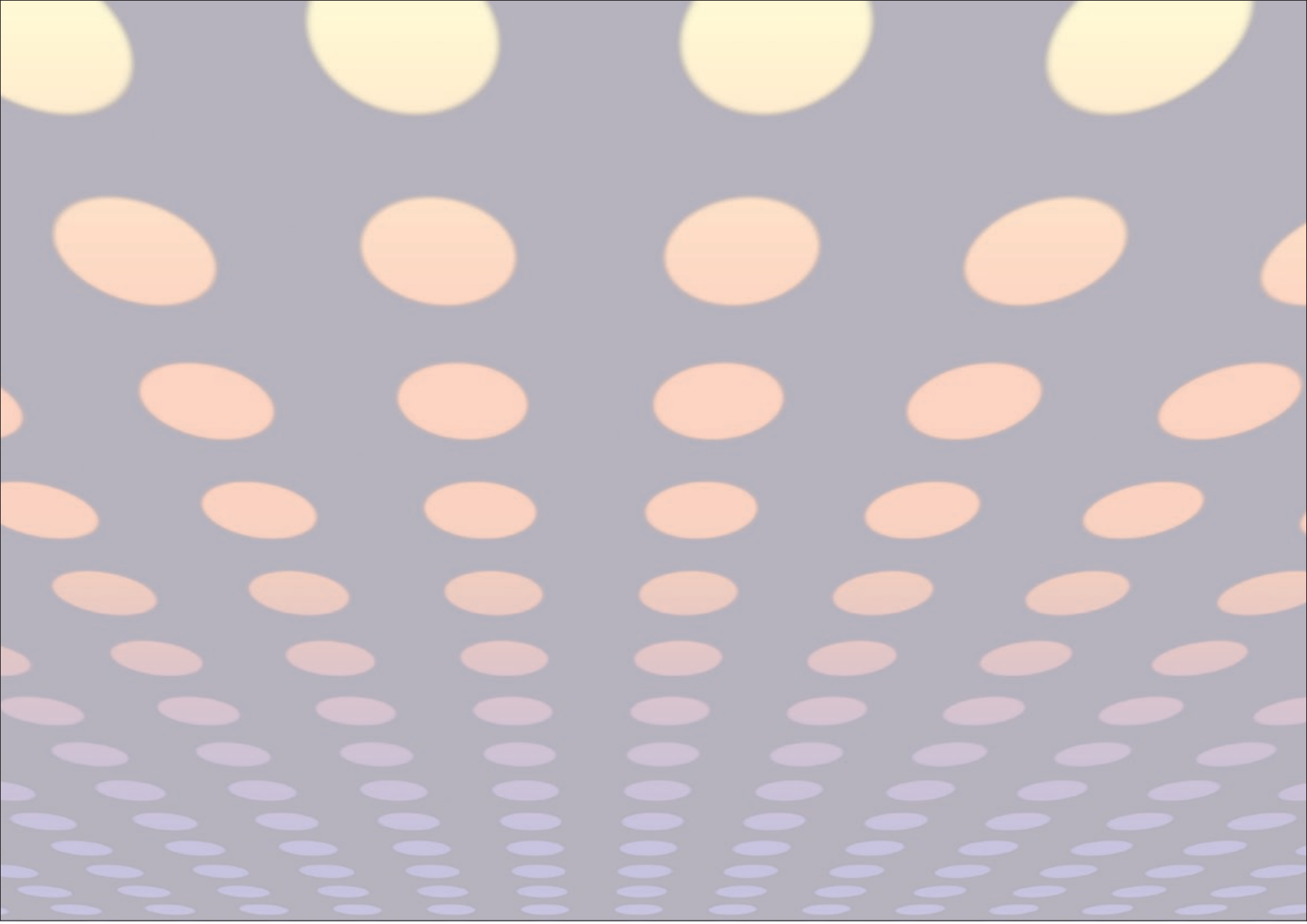
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PO Box 785, Ashmore City, Queensland 4214
Call 1800 738 383, visit www.resene.com.au
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In New Zealand:
PO Box 38242, Wellington Mail Centre, Lower Hutt 5045
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Colours printed as close as printing process allows.



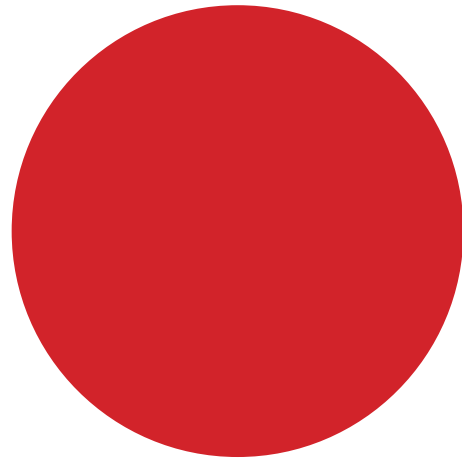
Illusion and tricks with colour

Colours can look different depending on lots of things, such as how much there is of the colour and what other colours are next to them. This section shows you lots of different ways that colours trick our eyes.

Afterimage

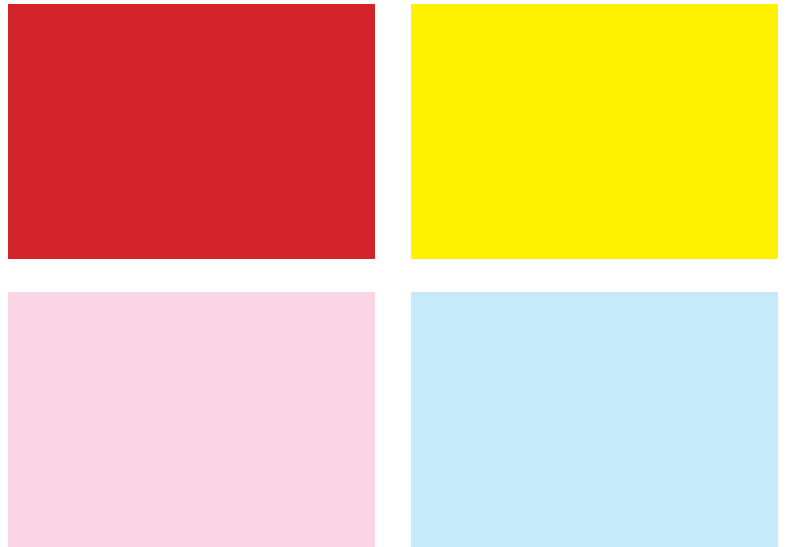
Staring at strong colours then a blank page can cause what is called an afterimage. Try the afterimage effect for yourself...

Stare at the bright red circle opposite. Then stare at the white paper beside it. What do you see?



Forwards and backwards

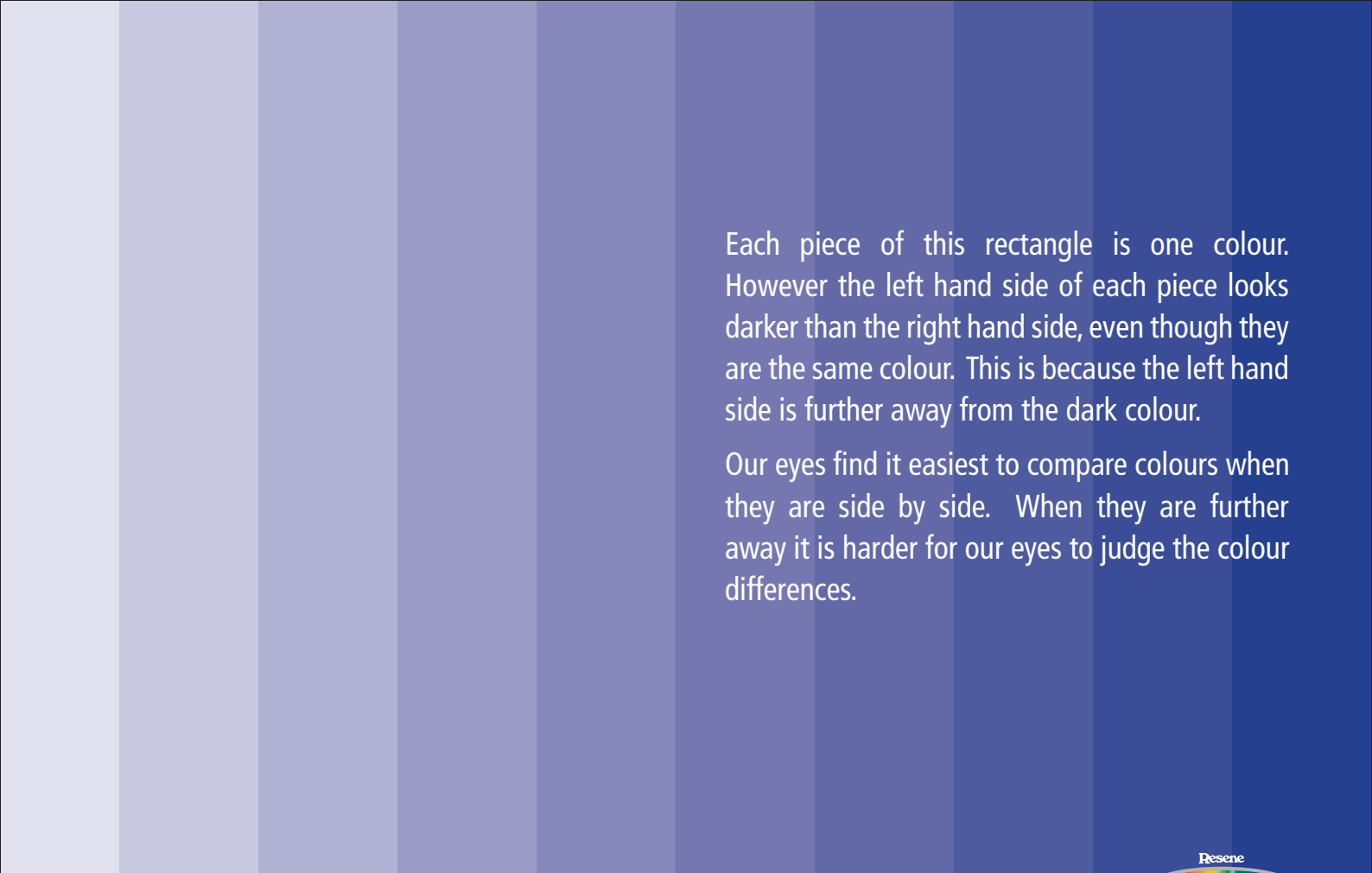
When you see SALE signs in stores they are often red. This is to make sure that customers see them. Our eyes see bright colours as closer than they are and soft colours as further away.



Backgrounds

Colours will also look different if you put them on different backgrounds even if the colour is exactly the same. Colours on a black background will look lighter than if they are on a white background.





Each piece of this rectangle is one colour. However the left hand side of each piece looks darker than the right hand side, even though they are the same colour. This is because the left hand side is further away from the dark colour.

Our eyes find it easiest to compare colours when they are side by side. When they are further away it is harder for our eyes to judge the colour differences.

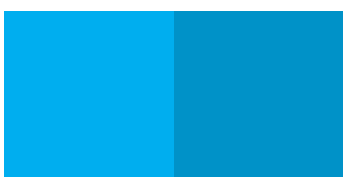
You can make a colour darker by adding black. You can make a colour lighter by adding white. You can make a colour duller by adding grey.



A **tint** is the pure colour with white added. Each time more white is added the new colour is lighter than the original colour.



A **shade** is the pure colour with black added. Each time more black is added the new colour is darker than the original colour.

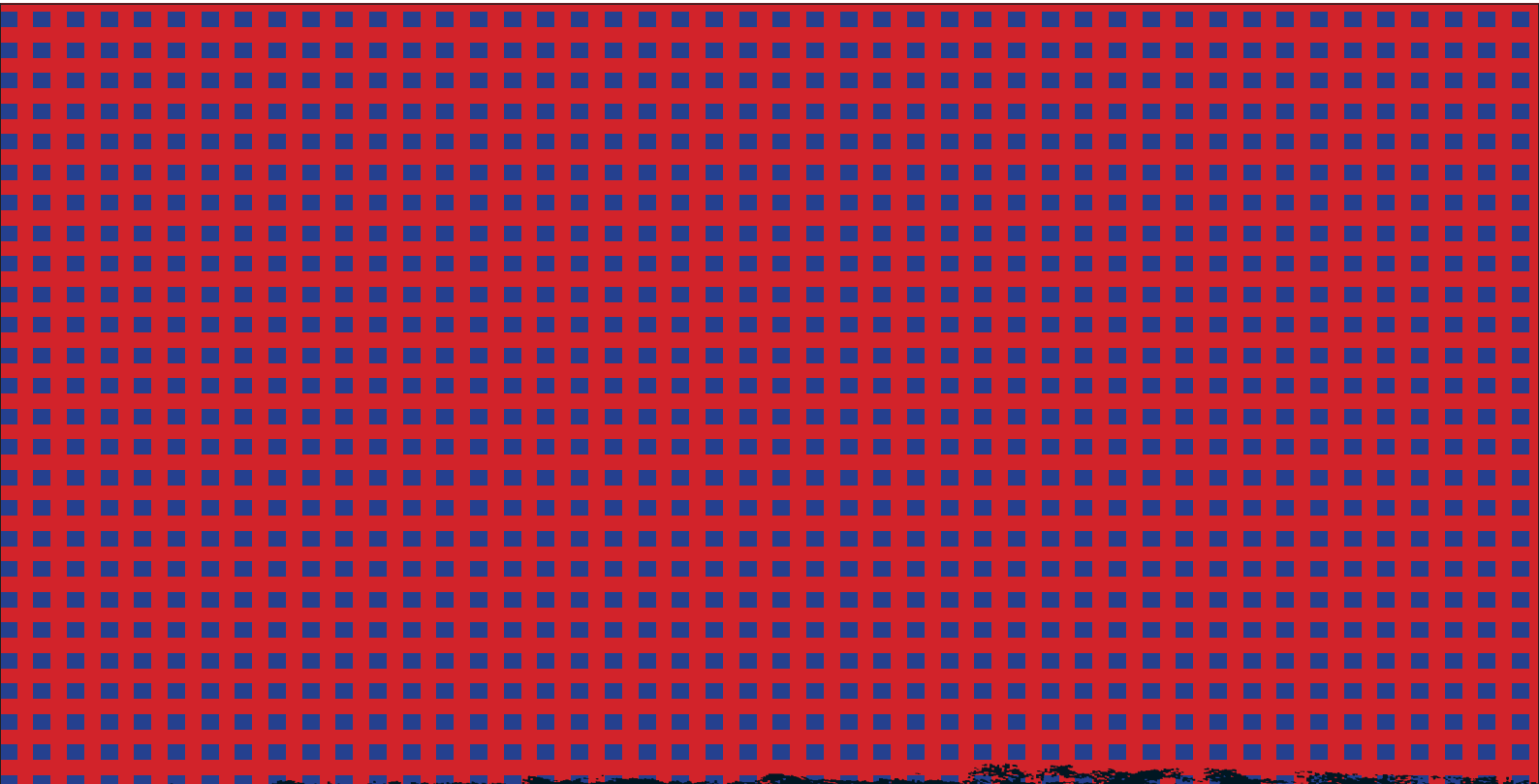
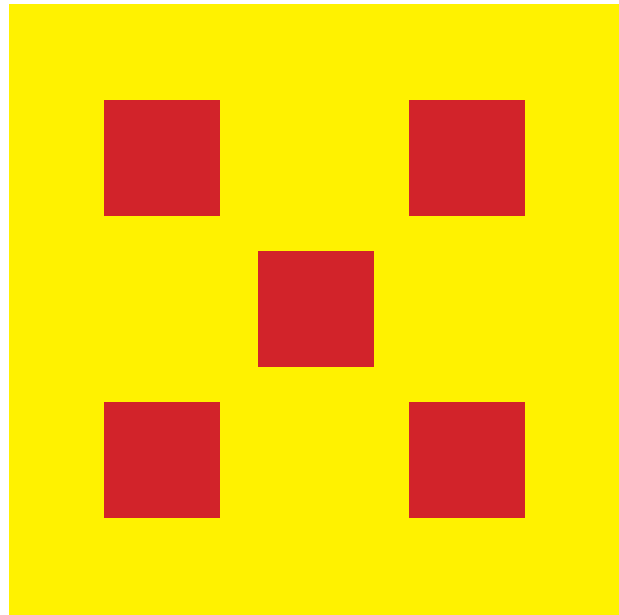


A **tone** is the pure colour with grey added. Each time more grey is added the new colour is softer and duller than the original colour.

Standing out

If you use the same amount of each colour in a large area each colour can be easily seen.

If you have two colours, one which covers a larger area and one a smaller area, the colour in the smaller area will stand out.



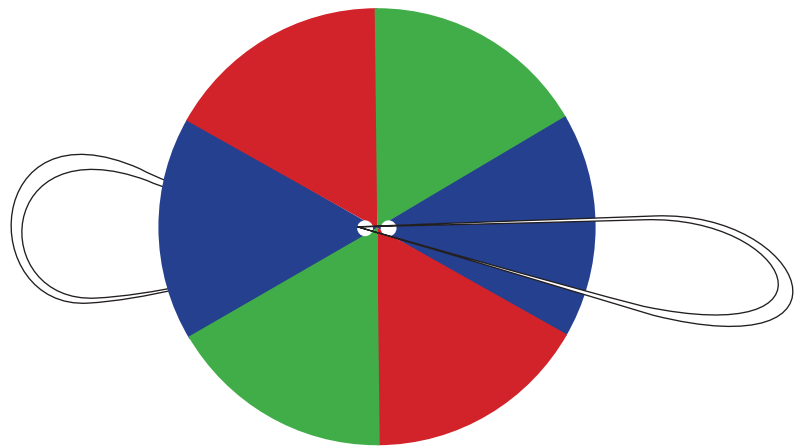
If you use the same colours in small areas with another colour it is hard for our eyes to see each colour properly. This is how a television set works – see the Dotted colour section for the full story.

Try this!

You can also try this yourself by making a colour spinner.

Cut out two circles of card. Divide into six segments and colour in using red, blue and green. Make sure you use red first, then green, then blue, then red again, then green again and lastly blue.

Place the two circles of card back to back so the sides you have coloured are visible and stick them together. Make two holes in the middle of the card. Thread a piece of string through and tie it so that you have a loop of string on either side of the card.



Hold the ends of the loops and turn the colour circle around until you have at least three or four twists in your string. Then pull the string tight at both ends and watch the colours spin. When it has nearly completely unwound loosen the string. The colour spinner will then wind up in the opposite direction. Once it has wound itself up pull tight on the string again.

As the circle twirls quickly your eyes will have trouble seeing the individual colours and will instead mix them together so instead of seeing red and yellow, your brain may mix them together and you will see orange. As it slows down your eyes will start to be able to see the individual colours again.

Try other colour combinations and patterns then twirl them to see what colours you get.

