

**YOU CAN** by jok church

**beakman & jax**  
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Dear Jax,

How do you really make black with red, blue and yellow?

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Questions, name & address

## Look @ Looking

1. How we look at colors. Let's look at green.

Light from the sun is white. It has all the primary colors of light in it: red, green and blue.

When we shine light on a green thing. All of the light waves that are not green are absorbed by the green thing. They're kind of like a sponge. The light waves that are green bounce out and turn into heat. That's what makes it green – it bounces out green light in everything that is not green.

### Seeing Green



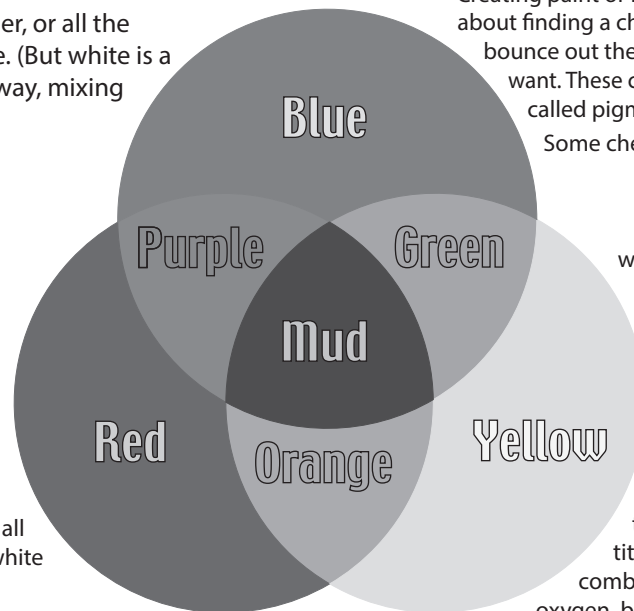
3. The only thing that bounces out into your eyes are the green light waves. You see green.

Now here's the important part. If all the light waves bounce out, you have a white thing, not a green thing.

If none of the light waves bounce out, you have a black thing. Getting something to absorb all light waves is really difficult. If you look at a black thing and can see its surface or a detail, that's light bouncing, so you don't really have black.

Dear Heather,  
Lots of us have mixed all the food colors together, or all the paints together, working to get black – or white. (But white is a whole other question, I think. Maybe not.) Anyway, mixing paints just gets you mud-color.  
Here's the deal: You can't make black mixing paints because black isn't really a color. (Take a breath now.) Black is what happens when there isn't any light – none.

*Jax Place*  
Jax Place



Creating paint or food colors is about finding a chemical that will bounce out the colors you want. These chemicals are called pigments.

Some chemicals, such as carbon, absorb most light waves and bounce out very little. So we can kind of fake blackness that way.

Other chemicals, like the metal titanium combined with oxygen, bounce out most colors of light and can be used to make white paint.