

<p><b>Science context</b> <b>Colour</b> The colour of an object depends on the wavelengths of light that are scattered and absorbed.</p> <p><b>HSW</b> Contribute to discussion about scientific ideas</p> <p><b>Mathematics</b> None</p> <p><b>Where?</b> In and around the school grounds</p> <p>Time 60 min</p>	<h2>Seeing the world through rose-tinted glasses</h2>									
	<p><b>Lesson summary</b> In this activity, students will identify what colours they see as they walk along a route in and outside the school. In pairs, at particular points, they will compare what colours they see with and without filter glasses. This will feed into a discussion to consider what they think the glasses do. This activity will help students to reveal what they understand about how we see colour and how coloured filters work in this process.</p> <p><b>Cognitive potential</b> This activity will introduce students to the idea of light wavelengths and will elicit their prior knowledge. Through the discussions the students may encounter a variety of possible explanations and a feeling of uncertainty. Students will need to listen to alternative ideas from other groups to reconsider their original theories of how filter glasses work.</p> <p><b>Central theme and skills</b> Energy (light) Contribute to discussions about scientific ideas</p> <p><b>Key resources</b> Class set of green and red filtered glasses. Purchased from: <a href="http://www.rainbowsymphonystore.com">www.rainbowsymphonystore.com</a> A table to complete with the headings:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 15%;">Point/object</td> <td style="width: 20%;">Partner 1 With red (green) filter glasses</td> <td style="width: 20%;">Partner 2 without</td> <td style="width: 20%;">Partner 2 Return journey with red (green) filter glasses</td> <td style="width: 25%;">Partner 1 Return journey without</td> </tr> <tr> <td style="height: 20px;"> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> <p>Poster paper and pens</p>	Point/object	Partner 1 With red (green) filter glasses	Partner 2 without	Partner 2 Return journey with red (green) filter glasses	Partner 1 Return journey without				
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	<p><b>Setting the scene (5mins)</b> Introduce the pupils to a plan diagram of the map of the school grounds. Ask students to locate specific areas on the map to familiarise themselves. Tell students that they will need to annotate the map with the route they take later.</p> <p>Write a message on the board using green and red pens. Give out filtered glasses and reveal the message on the board. Tell students that they are going to consider what filters do to light and colour that effects how they are seen.</p> <p><b>Observations outside (15-20mins)</b> Ask students, in pairs, to walk a specific short route that covers some inside school space (hall, gym and library) and some outside space (playground).</p> <p>In pairs, one partner will wear the red filter glasses. At each stop, the partner without the glasses, points to objects/pictures and asks the partner with glasses to describe the colours/textures etc they see. Then they tell their partner what colours they see without glasses. They record these descriptions in a table. On the return route, they swap over and go back to the same points/ objects and re-record the colours again. This activity then is repeated, this time with the green filter glasses.</p>									

***Sharing ideas and provoking conflict (15-20mins)***

Back in class get the pairs to regroup back into their thinking groups for small group discussion.

**Talk to each other about what colours you saw with and without the glasses.**

**What do you think these glasses do?**

Then ask and collect ideas on

**What's similar and what's different about seeing**

- a. **with red glasses and without**
- b. **with green glasses and without**
- c. **between red and green glasses**

**Is it always true that people see things the same?**

**Why might that be?**

(You may not want to ask all these questions and focusing on one filter colour may be sufficient)

Again ask

**What do you think these glasses do?**

Give the groups time to talk about this and ask them to take one point/feature that they recorded and use this as the basis of their annotated diagram to illustrate their thinking.

***Linking ideas together (15-20mins)***

Gather the groups together for a whole class discussion

Invite different groups to share their illustrations. Encourage the listeners to consider the different ideas and compare/disagree/agree

**What do you think about that idea? Who thinks something else?**

What's easy and what's difficult to explain about the changes you saw?

After this whole class discussion, ask the class to reflect and write down their thoughts individually, in their books.

**Has your thinking changed? What do you think glasses do?**