“Let’s Shine a Light on Light Pollution” lesson plan

Duration: 20-30 minutes

Objectives:

- Students will understand the impacts of development on freshwater resources and how humans manage factors such as light pollution.
- Students will make comparisons between developed and natural sites and explore the underwater impacts on wildlife communities.
- Students will identify and assess ways freshwater habitat and water quality can be enhanced and protected locally.
- Students will assess the impact of human activities on the environment, and analyze ways to mitigate negative impacts and contribute to environmental sustainability.
- Students will demonstrate an understanding of interactions between living organisms and natural versus artificial light sources in the environment.

Background:
Plants and animals have evolved to rely on Earth’s natural cycles of light and dark. These daily cycles manage important behaviours, including reproduction, eating, protection from predators, and sleep. Light pollution has a negative impact on communities and local wildlife. Glare and light trespass can reach great distances to unintended destinations. This activity will help students understand the impacts of light pollution and allow them to apply their knowledge to determine actions they can take to help reduce light pollution in their community.

Materials:

- One “Light Pollution Quiz” handout per student
- One writing utensil per student (pencil recommended)
- “Light Pollution Quiz - Answers” for teacher reference

Procedure:

1. Discuss why excessive artificial outdoor lighting is an issue and what factors contribute to light pollution in both urban and rural environments. What steps can we take to minimize light pollution in our local community and protect wildlife?
    The solution to light pollution does not have to be getting rid of all outdoor lights. Instead, we may not need as many or they can be retrofitted to reduce the glare.
    Note: Access free resources to facilitate the class discussion at watersheds.ca/light
2. Give one “Light Pollution Quiz” handout to each student and have students independently answer the questions to complete the worksheet.
3. Review and take up the quiz as a class using the “Light Pollution Quiz - Answers” for reference. Challenge students to ask themselves the following questions when assessing outdoor lighting:
    a. Does the area really need to be lit?
    b. Does it need to be this bright?
    c. Is the light transmitted further than it needs to be?